

DOES THEORY OF MIND AND EMPATHY DIFFER IN PATIENTS WITH A DIAGNOSIS OF SCHIZOPHRENIA DEPENDING ON THE PREVALENCE OF PSYCHOPATHIC TRAITS

Melora Wilson

2) Part 2 is an empirical investigation into whether ToM and empathic ability differ in patients with a diagnosis of schizophrenia depending on the presence of psychopathic traits. A combination of staff and self-report, free note consultation and psychometric tests were used to assess ToM, empathy, psychopathic traits and schizophrenia symptoms. The data was analysed using SPSS 11 for Windows.

3) Part 3 is a critical appraisal of the research. It firstly examines the methodological difficulties that may be involved in conducting an investigation of these complex issues, followed and how the findings may have implications for clinical practice.

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Overview

This thesis consists of three parts

1) Part one is a literature review concerning the relationship between Theory of Mind (ToM) and empathy in psychopathy and schizophrenia. It consists of five main sections, summarising 1) the key principle concepts involved, 2) the relationship between ToM and empathy in schizophrenia, 3) the relationship between ToM and empathy in psychopathy, 4) the links between psychopathy and schizophrenia and 5) the relationships between the key concepts. The review concludes with a discussion about the methodological and clinical issues involved and suggestions for future research possibilities.

2) Part 2 is an empirical investigation into whether ToM and empathic ability differ in patients with a diagnosis of schizophrenia depending on the presence of psychopathic traits. A combination of staff and self-report, file note consultation and psychometric tests were used to assess ToM, empathy, psychopathic traits and schizophrenia symptoms. The data was analysed using SPSS 11 for Windows.

3) Part 3 is a critical appraisal of the research. It firstly examines the methodological dilemmas that arose before offering an appraisal of the conceptual issues involved and how the findings may have implications for clinical practice. The appraisal concludes with a personal reflection of the overall process.

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Part 1

A summary of the existing literature concerning theory of mind and empathy in people with schizophrenia and/or psychopathy.

Abstract

This review looks at the associations between psychopathy, schizophrenia, empathy and Theory of Mind (ToM). While an abundance of work has emerged exploring ToM abilities in people with schizophrenia and ToM and empathy abilities in people with psychopathy, in comparison, few studies to date have investigated the understanding of empathy in people with schizophrenia or how ToM and empathy manifest in people with a co-morbid diagnosis of schizophrenia and psychopathy. Existing literature on the theoretical backgrounds of the primary concepts (schizophrenia, psychopathic disorder, ToM and empathy) are examined before summarising how the literature has addressed how each relate to one another. Following a conclusion of the findings the review brings to a close with a discussion of methodological and conceptual issues, suggestions for future research and a consideration of the clinical implications involved.

Introduction

This literature review outlines previous research on the under-explored relationship between psychopathy, schizophrenia, empathy and Theory of Mind (ToM). The review summarizes and critiques published studies in an attempt to investigate whether the co-morbidity of psychopathy and schizophrenia have an impact on how the thoughts and emotions of others are understood and if so does the impact depend on which disorder is most prevalent in the clinical presentation? It is hoped that this review will increase knowledge in how mentalization abilities in forensic schizophrenia patients are understood.

Previous work has shown that ToM is impaired in people who have a diagnosis of schizophrenia but is intact in people with psychopathy. Research has also suggested that empathy is impaired in people with psychopathy but little has emerged investigating the relationship between empathy and schizophrenia. How these four concepts interrelate therefore poses an interesting theoretical question. Reviewed studies were obtained by searching the database PsychInfo using the target words: Theory of mind (ToM), Empathy, Schizophrenia and Psychopathy. The terms ToM and Empathy were combined searched together first. Forty eight papers were found, 3 of which were used in the review. ToM was then combined with the term Schizophrenia and 85 papers were found, 18 of which were used. As the literature on psychopathy often includes the term Anti-social Personality Disorder (ASPD) the terms were jointly used. Psychopathy/ASPD was first combined with the term Empathy. This search yielded 81 papers, 5 of which were discussed in this review. Psychopathy/ASPD were then searched with ToM, 3 papers were found, 2 of which were used. The term Schizophrenia was next

searched with Empathy, 88 papers were found, 3 of which were used in the review. Finally Schizophrenia was searched with Psychopathy/ASPD, which gave 128 papers, 5 of which were discussed. Additional articles were obtained via the reference lists in the publications found in the initial search. Only articles written in English were reviewed. The published dates ranged between 1978 and 2007.

This paper is organised by first outlining the principle concepts involved, namely schizophrenia, psychopathy, ToM and empathy. It will then look at how the literature relates ToM and Empathy in schizophrenia and then how studies have addressed ToM and Empathy in psychopathy. The paper will then turn to the links between psychopathy and schizophrenia before summarizing the studies which look at how all these concepts inter-relate. After reaching some overall conclusions, methodological and conceptual issues will be discussed as well as clinical implications and suggestions for future work in these areas.

Basic conceptual backgrounds

Prior to looking at how the literature has associated the four main concepts, a brief definitive summary of each one will be outlined.

Schizophrenia

Schizophrenia is categorised in DSM-IV (American Psychiatric Association, 1994) as an Axis 1 major psychiatric disorder. It is the most common psychotic disorder and affects approximately 1% of the world population (British Psychological Society, 2000). In the year 2000 its prevalence in the UK was estimated at between 0.2 and 1 per cent with a general consensus that about one person in a hundred will receive a diagnosis of schizophrenia in their lifetime (British Psychological Society, 2000). To meet diagnostic criteria an individual must experience two (or more)

symptoms of delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behaviour and negative symptoms (e.g. psychomotor slowness, affective blunting and intellectual deficit) (American Psychiatric Association, 1994). These symptoms must cause a significant disturbance to social, interpersonal and occupational functioning and persist continuously for at least 6 months. People suffering from schizophrenia often display inappropriate and bizarre social behaviour, which clinically cannot be underestimated. The inevitable impairments in social communication and integration permeate through numerous areas of function (American Psychiatric association) and may worsen over time and contribute to the rate of relapse (Brüne, 2005).

The causes of schizophrenia are widely debated although there is general agreement that organic factors play a large role (British Psychological Society, 2000). Psychotic experiences sometimes follow major life experiences (positive or negative) and can be maintained or abated by circumstances in the environment (British Psychological Society, 2000). Cognitive models concentrate on the patterns of thought that are associated with schizophrenia and seek to understand how people with this diagnosis perceive the world around them in terms of attribution biases and cognitive deficits. For example, there is good evidence that people with delusions tend to jump to conclusions and adopt biased reasoning strategies when presented with information (Garety, et al, 1991). There is also good evidence that people with schizophrenia display problems in understanding the thoughts and behaviours of others, which is arguably pivotal for effective social communication (e.g. Frith, 1992).

Psychopathic Disorder

In comparison to schizophrenia, psychopathic disorder is somewhat less clearly defined. Blackburn (2000) interprets the concept of psychopathy as an attempt to attribute harmful social rule-breaking to a type of person and argues that a label of psychopathy is therefore a form of moral judgement. The Mental Health Act (1983) defines psychopathic disorder as a persistent disorder, independent of intellectual impairment, which results in aggressive or irresponsible behaviour.

Features of psychopathy include interpersonal, affective and lifestyle factors. On an interpersonal level, people who display psychopathic traits are described as grandiose, superficial, manipulative and callous. Affective factors include shallow labile emotions, weak emotional ties and little subjective distress. Particularly relevant may be a lack of remorse or empathy. Lifestyle features involve impulsivity, violation of social norms and irresponsible conduct (Hare, 1999). Psychopathy is routinely assessed using the Hare Psychopathy Checklist- Revised (PCL-R) (Hare, 1991, 2003). The PCL-R is a 20 item symptom construct rating scale intended for use in forensic settings. Ratings are made on the basis of semi-structured interviews and a review of collateral information. Items involve both interpersonal traits (e.g. Glibness, Callousness) and behavioural constructs (e.g. Impulsivity, Criminal Versatility). The response format is a 3 point scale (0= item does not apply; 1= item applies somewhat; 2 =definitely applies). Scores equal to or fewer than 29 is said to reflect non-psychopathy, while scores equal or above 30 are said to be indicative of psychopathy.

Psychopathy is largely a disorder of unknown aetiology. However some theories have emerged which have attempted to explain what leads to the manifestations of the behaviours involved. For instance, although research demonstrating overt brain

abnormalities in psychopaths are lacking, neurological dysfunction models, have frequently been observed in the literature (e.g. Soderstrom, 2003; Intrator et al, 1997, Kiehl et al, 2001). According to Blair (1995, 2005) psychopathic traits manifest from amygdala developmental impairment. This deficit is said to result in difficulties with perceiving sad or fearful facial expressions, which, Blair argues, is crucial for the inhibition of aggression. Blair named this model the Violence Inhibition Mechanism (1995).

Disorganised attachment patterns have also been suggested as an explanation of the development of psychopathy (Crittenden, 1997). According to Crittenden insecure attachment hinders the development of healthy affect and cognitive growth (i.e. the infant's ability to mentalize the intentions of others). Fonagy et al (2002) define mentalization as an imaginative mental activity which enables the perception and interpretation of another's thoughts, feelings and intentions. For mentalization to develop the infant must first understand itself through the congruent mirroring of the caregiver. This enables a platform to learn and care about the thoughts and feelings of others and is said to be the basis for emotional self-regulation, the capacity for emotional interpretation and the development of pro-social relationships (Fonagy et al, 2002). By considering the thoughts and feelings of others we develop moral standards and are less likely to want to violate their rights. If development of such standards is impaired, as is suggested in presentations of psychopathy, consequences of actions on others may be disregarded. Essentially the 'victim' becomes devalued because of an inability to appreciate the feelings and thoughts of others (e.g. Fonagy 2004)). Developmentally, neuro-biological or attachment theory explanations of psychopathy need not be mutually exclusive.

Theory of Mind

The ability to mentalize has also been termed ToM (e.g. Frith et al, 1991). For the purpose of this review, when discussing mentalization the term ToM will be used.

ToM is a cognitive skill available to most adult humans, and has been defined as the ability to interpret observable behaviour in order to represent the mental states of others and be able to predict their future behaviour (Premack and Woodruff, 1978). The concept has been around since the late 1970s, first in the context of work with chimpanzees (Premack & Woodruff, 1978) and later in research with childhood autism (Baron-Cohen et al, 1985). More recently research has looked at ToM in schizophrenia (e.g. Frith 1992) (see below).

The structure of ToM can be understood in three stages. First and Second order ToM and advanced ToM. First order ToM refers to the understanding that another person may have a false belief about the state of the world, while second order ToM relates to an understanding that another may hold a false belief about the mental state of another (e.g. Mazza et al, 2001). Advanced ToM, on the other hand, refers to more subtle mental state inferencing. A good example of advanced ToM is the ability to understand and recognise a faux pas. A faux pas occurs when someone says something that is perhaps unacceptable without realising that they should not have said it. For someone to understand that a faux pas has occurred two mental states need to be represented, firstly that the speaker is unaware of their social blunder and second that the recipient is likely to feel offended or hurt (e.g. Stone et al, 1998).

It has been argued that a “theory of self and others” has emerged as an

evolutionarily adaptive response to an increasingly complex social world (Brothers, 1990, cited in Brüne, 2005). The ability to read another's mind may help protect from predators and facilitate social success, both of which may result in reproductive accomplishment. Some empirical evidence has emerged which suggests that chimpanzees have evolved ToM skills (e.g. Bryne, 2003, cited in Brüne, 2005). There is also evidence that the neural system underpinning ToM skills may have evolved from the ability to monitor the behaviour of our co-specifics (Frith and Frith 1999).

In terms of theoretical background, three main conflicting views have emerged concerning the acquisition of ToM. The Theory-theory view postulates that ToM depends on an existing body of knowledge about mental states and the rules associated to those mental states. These rules are governed by existing beliefs (whether true or false), which develop in an individual's early years (Langdon and Coltheart, 1999). According to Perner (1991) this is essentially a '*metarepresentational*' model of ToM, which evolves through infant development and experience.

Simulation theory, on the other hand, argues that we perceive, interpret and predict the actions and intentions of others by imaginatively identifying with them, and then simulating what we would do if we were in their circumstances (Langdon and Coltheart, 1999). Essentially we would imagine that the other would think or do precisely what we would see ourselves doing or thinking given that we were in the same situation. Although the ability to simulate is deemed innate, through the course of development and through more varied opportunities to simulate, accurate simulation improves (Bönshtein, et al retrieved 2005).

Both of the above theories have the common thread of experience playing an important role in the development of ToM. The innate module theory (cited in Bönshtein et al, 2005), however argues that the ability to impute mental states is inborn and develops naturally via a process of neural maturation, not learning. This model suggests there are cognitive structures specifically dedicated to attributing mental states of others, which become activated by certain events. Evidence to support these ideas comes from neuro-imaging studies, which have indicated specific brain sites, (e.g. the medial prefrontal cortex and the temporal-parietal junction), as important for the representation of the mental states of others (e.g. Lee, et al, 2004).

Empathy

Although a coherent view of empathy has yet to emerge, the concept has been generally defined as the ability to experience the emotions of another and behave compassionately (e.g. Fisher and Howells, 1993). However debate continues within the literature as to whether empathy is best thought of as a cognitive or affective construct or both.

The prevailing opinion is that empathy is a temporally fixed disposition, which remains consistent across individuals and situations (Marshall, et al, 1995). However research with sex-offenders has suggested that empathy may be context or person specific rather than stable (e.g. Marshall et al, 1995; Covell and Scalora, 2002).

Many researchers now generally accept that empathy involves both cognitive and

affective, along with communicative and relational elements (e.g. Blair 2005). Davis (1983), for instance, proposes that empathy consists of four distinguishable yet overlapping constructs. The first, 'perspective taking' reflects the cognitive component and refers to the ability to take on the viewpoint of another. The next component 'fantasy' is an affective component, which reflects a person's tendencies to imaginatively transpose themselves into the emotions of someone fictitious. Third is 'empathic concern' which is more reflective of sympathy and taps into concern for unfortunate others. The final component, 'personal distress' is another affective factor and reflects personal feelings of anxiety in distressing interpersonal settings. This last aspect seems to be a crucial primary step in instigating empathic reaction. Davis (1983) also associates empathy with various other socio-cognitive constructs. For instance he found that 'perspective taking' ability and 'personal distress' were positively correlated with better social functioning and higher self-esteem. This may be because the ability to anticipate the behaviours of others facilitates smoother and more rewarding interpersonal relationships. 'Fantasy' component was related to sensitivity to others and introversion, while 'empathic concern' was, perhaps unsurprisingly, associated to selflessness and emotional reactivity. Poor impulse control and aggression were also correlated with empathy problems (Covell and Scalora, 2002).

Marshall, et al (1995) also understand empathy as a staged process. They postulate that empathy involves an ordered progression of 'emotion recognition', perspective taking', 'emotional replication' and 'response decision'. 'Emotion recognition' refers to the ability to accurately recognise the emotional state of another and is a pre-requisite for the ability to put oneself in the shoes of another and view the

world as they do ('perspective taking'). Both the ability to discriminate emotion and adopt the perspective of another is said to be necessary for the vicarious emotional response and the ability to reproduce the emotion of a target other ('emotion replication'). 'Response decision' relates to the decision to act or not act, based on how the observer has formulated the situation.

Davis (1983) and Marshall et al's (1995) ideas come from an information processing perspective. This suggests that impairments in 'true' empathy can occur at any stage (or component) in the procedure. Essentially empathy in its conceptual entirety requires the presence of all aspects and faulty processing at any stage may impair appropriate response. Blair (2005) also argues that empathy 'subsumes a variety of neuro-cognitive processes' (p.699). He identifies 3 main neural divisions which are partially dissociable from one another; cognitive, motor and emotional empathy. Cognitive empathy concerns the ability to represent the internal states of others (effectively ToM), motor empathy refers to the mirroring of the motor responses of another, while emotional empathy involves some sort of appropriate response by the observer to the emotional displays of the other.

To summarise, it seems that the literature has yet to reach an agreement to how 'empathy' is best defined. While debate remains as to whether empathy is a fixed disposition or a context dependent trait, the fundamental contention appears to be whether it is best understood as a cognitive or affective construct, or both. Perhaps the multi-component models, which suggest both are important, offer some consensus. Indeed it would make sense that the ability to experience the emotions of another and behave compassionately would involve possibly separate, albeit

interrelated, cognitive and emotional processes. What does appear to be in need of more clarification and theoretical development is whether ToM is essentially the perspective taking sub-component of empathy or an independent construct in itself.

The relationship between the concepts

So far we have looked at how the literature has defined each of the main constructs. A systematic approach will now be taken to examine the various relationships between them. Initially the relationship between empathy and ToM will be explored before examining how each disorder is related to ToM and empathy respectively.

The relationship between Empathy and Theory of Mind

Although the aforementioned information processing paradigm implies that ToM is a cognitive component of empathy and a pre-requisite for affective empathy to occur, the link between ToM and empathy represents an under explored field of study (Brüne, 2005). Some evidence from the literature suggests that neuro-developmental disorders like autism (Frith 2001), frontal cortex brain injury or amygdala damage (Lee et al 2004) may result in both ToM and empathy deficits. This would be consistent with the idea that the two concepts are related.

Blair (2005) assumes there are partially dissociable neuro-cognitive systems (within the same overall neuro-biological architecture) and conceptualises empathy as a synthesis of ToM, motor and emotional constructs. He observed that, whereas people with autism routinely had difficulties in ToM and motor empathy, these abilities were intact in presentations of psychopathy, a disorder marked by emotional empathy dysfunction. Blair suggested that, while all three components relied on the superior temporal cortex, each was implemented by partially separable

systems: ToM by the integrated neural responding of temporo-parietal regions, temporal pole and paracingulate cortex; motor empathy by the inferior parietal and inferior frontal cortex and emotional empathy by the amygdala, insular or ventrolateral frontal cortex depending on whether the individual was responding to fearful/sad/happy, disgust, or angry stimuli respectively.

Similarly Lee et al (2004), argue that the brain networks underlying ToM and empathy are ‘overlapping yet distinct’ (p. 398). Although both rely on the same frontal-temporal social cognition region, they may require different weightings of sub-components within the network. Their review of the literature, which encompasses both neuro-imaging and neuro-psychological studies, suggest that empathy is more strongly influenced by temporal/amygdala and orbito-frontal activity, while ToM is more reliant on the medial frontal cortex.

In summary it would appear that ToM and empathy share some common ground in terms of neuro-cognitive architecture, but perhaps differ on specific networks and reliance of sub-components. However, further work is needed in disentangling whether ToM is best understood as a sub-component of empathy or as a construct which stands alone. While much research seems to use the term ToM as synonymous to ‘cognitive empathy’, other authors appear to distinguish between the two.

Theory of Mind and Schizophrenia

The link between ToM deficits and schizophrenia is now well established (e.g. see Harrington et al, 2005 for a review). It is not the aim of this part of the paper to review and summarize these findings but rather to offer a more detailed look at

specific areas where disputes remain, namely whether ToM impairment is a specific deficit in this population or reflective of a global difficulty, whether the ToM problems are state or trait dependent or whether ToM deficit in schizophrenia is associated with social competence.

Global Vs Specific impairment?

It is perhaps Fodor's (1992) modularity theory, which influences contemporary thinking about the proposed links between ToM and schizophrenia.

Frith and Friths' work (e.g. 1991) is particularly important in terms of understanding ToM and schizophrenia within a modular theoretical framework. They suggested that problems with ToM result in cognitive misrepresentations of one's own and other's intentions and may account for some of the positive and negative symptoms experienced by people with schizophrenia, possibly resulting in a breakdown of communication and impaired social functioning. Essentially, instead of assuming beliefs to be subjective representations of reality, assumptions of intentions are taken as objective reality (Frith, 1992).

Frith (1992) argues that these impairments in ToM are the result of disruptions to the neural mechanisms in the brain. Evidence to support this has included brain imaging studies showing that the areas of the brain (e.g. the prefrontal cortex, the paracingulate cortex and the temporal cortex) thought to be involved in ToM are frequently found to be abnormal in schizophrenia (e.g. Narr et al, 2001), Moreover some anti-psychotic medications (e.g. Olanzapine), which act on these parts of the brain, have been associated with improvements in social cognition in people with psychotic illness (Littrell et al, 2004).

If impaired mentalizing skills are a result of faulty or immature neuronal development, one would expect deficits to be largely specific rather than a reflection of more general cognitive impairments. Harrington et al (2004), for instance conducted a critical analysis of the literature and found that 27 out of the 30 studies reviewed demonstrated ToM deficits in patients with schizophrenia, compared with a control group. Moreover, all but four of these studies found that ToM deficits were independent of either general intellectual ability, memory or executive performance. Furthermore, 13 studies used psychiatric patients as comparison groups and found that the people with schizophrenia scored significantly lower than the psychiatric controls.

Further supporting the idea that ToM impairment in schizophrenia is a specific deficit, Pickup and Frith (2001) presented two ToM tests and three equally difficult 'non-mental' representation control tasks to a sample of patients with schizophrenia and found that impaired performances were only observed on the tasks which required ToM.

In an attempt to compare the 'theory theory' and the innate module theory, Bönshtein et al (2005) compared inpatients with schizophrenia with both healthy and clinical control populations on a range of ToM tasks (verbal and non-verbal) and on a range of Theory of Biology (ToB) tasks. The ToB tasks aimed to address general conceptual knowledge and the ability to theorize without involving the interpersonal dimension that ToM demands. These tasks involved general lexical knowledge and understanding of more abstract concepts like animism and death. Their findings showed that patients with schizophrenia performed significantly

worse than both the clinical and non-clinical samples on the ToM task but performed equivalently on the ToB tasks. While the severity of symptoms might have affected the findings this clearly suggested that the patients with schizophrenia had specific difficulties with ToM and not with general theorizing.

In conclusion, the weight of evidence comparing ToM skills with other cognitive abilities suggests that ToM impairment in people with schizophrenia is a specific difficulty rather than part of a global cognitive deficit and may be the result of erroneous modular brain processing.

Trait Vs State Variable?

Whether ToM impairment in schizophrenia is a trait or state variable invites further debate in the literature. Much work has indicated that people with a diagnosis of schizophrenia only have deficits in ToM when they are actively symptomatic (e.g. Corcoran, et al, 1995; Pickup and Frith, 2001). For instance Frith (1992) argues that patients with remitted psychoses or patients with only “passivity” symptoms may show no deficits in ToM. This would appear to support a state definition.

On the other hand, supporting the trait argument, Janssen et al (2003), compared remitted schizophrenia patients with first-degree relatives and controls without a family history of psychotic disorders and found that there was a continuum in performance ability, with schizophrenia patients being most impaired, followed by first-degree relatives. This finding was independent of IQ and performance on several neuropsychological tests. Consistent with this finding, Herold et al (2002), found that patients in remission showed a significant impairment in irony tasks compared to a matched healthy control. Furthermore a Danish prospective

longitudinal project (Schiffman et al, 2004), demonstrated that children who later developed schizophrenia had lower scores on a perspective- taking task than children who did not develop any psychiatric problems.

Continuity models of psychosis-proneness also offer good evidence for ToM being trait rather than state dependent (Harington et al, 2005). Continuity models of psychosis-proneness relate to the idea that clinical symptoms in schizophrenia patients are extreme expressions of personality traits found in healthy individuals. Marked schizotypal traits, although found in the normal population, are argued to be associated to a cognitive vulnerability that predisposes to psychosis (Langdon and Coltheart, 1999). Pickup (2006) found that positive schizotypal traits in a non-clinical sample were related with subtle impairments in ToM, independent of executive functioning, reasoning ability or verbal IQ . Other studies have provided evidence for a parallel association between the severity of schizotypal symptoms in non-clinical samples and impaired ToM performance. (e.g. Langdon and Coltheart, 1999). In short there now appears to be favourable evidence to suggest that ToM deficits represent a trait marker of the disorder, although this is an area which requires further exploration.

ToM deficit and social competence

A final question which invites discussion is whether the ToM deficit in schizophrenia is associated with social competence in this population. Whereas ToM deficits may imply problems with social competence, only a few studies have directly linked levels of social performance with ToM ability. Brüne (2005) hypothesised that performance on social cognitive tasks contributes a significant proportion of variance that distinguishes patients with schizophrenia from controls

and that these measures go some way to explain the social behavioural abnormalities observed in this population. In his study 23 patients with schizophrenia were compared with a control group. Social cognition was assessed using a perception of facial expression task, which involves individuals naming the emotion which best depicts the facial expression and two ToM instruments. The behavioural measures used were the Positive and Negative Syndrome Scale for schizophrenia (PANNS, Kay et al 1987) and staff ratings of socially deviant behaviour. In line with previous research, the group with schizophrenia demonstrated greater difficulty in the ToM tasks, with, ToM performance being the most significant predictor of severe social behavioural abnormalities, independent of duration of illness. Although control groups were not matched for sex and any putative effects of medication were not taken into account, this suggests that ToM is fundamentally linked to social behavioural competence.

Consistent with this finding, Roncone et al (2002) showed that compromised ToM abilities in schizophrenia contributed to correctly predicting poor social performance in the community. Similarly, Schenkel et al (2005) found that impaired ToM was associated with poorer childhood social functioning. Cutting and Murphy (1990) found that patients with schizophrenia performed worse on a questionnaire measuring knowledge of how people tend to act in social situations, compared to other psychiatric controls, thus implying a specific social naiveté which arguably may impair effective communication in social settings.

Mazza et al (2003) were also interested in whether people with schizophrenia showed deficits in social interactions and whether these deficits were the result of a

difficulty in the representation of mental states. They compared a sample of people diagnosed with schizophrenia according to DSM-IV (American Psychiatric Association, 1994) with a control group matched for age, sex and education on a 'Machiavellian Intelligence' task, which involved rating items on morality and duplicity and first and second order ToM of tests. Their results demonstrated that people with schizophrenia were less able to use Machiavellianism than a control group and that this impairment was correlated with poor mentalizing abilities.

In summary, based on the available literature, it would appear that ToM impairment in people with schizophrenia is a specific deficit, most likely the result of abnormal neuronal mechanisms, which probably presents as a trait marker of the disorder and one which is likely to affect social competence.

Empathy and Schizophrenia

In comparison few published studies to date have investigated the understanding of 'empathy' per se in individuals with schizophrenia. However, as it has been suggested that ToM is a sub-component of empathy (e.g. Davis, 1983; Marshall, 1995), the implication may be that people with schizophrenia may have empathy problems. Abu-Akel and Abushua'leh (2004), for instance, demonstrated a negative correlation between empathy and various components on the Brief Psychiatric Rating Scale (BPRS, Overall and Gorman, 1962) which led them to deduce that severity of illness is related to severity of empathic impairment. However empathy was measured using a second order ToM task (recognition of faux pas) and not a tool designed to measure empathy specifically, thus confounding measurements of empathy and ToM.

On the other hand, a recent study by Montag et al (2007) looked at empathic abilities in schizophrenia using the Interpersonal Reactivity Index (IRI, Davis 1983), which is a self-report measure assessing perspective taking, empathic concern, personal distress and fantasy, and found that self-ratings of affective empathy (i.e. concern for others) did not differ compared to matched healthy controls. However, in accordance with previous research (e.g. Pickup and Frith, 2001) the authors did find a significant reduction of cognitive empathy with advancing duration of illness.

Although 'empathy' as a concept itself has been rarely looked at in association with schizophrenia a large literature on emotional processing in schizophrenia has emerged. Pinkham et al (2003), for instance, cite several studies which demonstrate amygdala abnormalities in individuals with schizophrenia. As research has consistently supported the role of the amygdala in emotional processing (Pinkham et al, 2003) the implication is that this ability will be impaired in people with schizophrenia. Brune (2005) examined emotion recognition in people with schizophrenia and found that, with the exception of appreciating happiness or identifying sadness, patients performed poorly on a perception of facial expression task compared to a control group. Gur et al (2006) also demonstrated poor performance on a battery of tasks which required the identification and differentiation of intensity of emotions. However both studies concentrated on emotion recognition and did not address other possible components of empathy, like emotional replication or response decision (e.g. Marshall et al (1995). Reports have suggested that people with schizophrenia have distorted experiences of emotion, with some patients experiencing negative emotions more intensely and positive emotions less intensely than healthy controls (see Lee et al

(2004) for a review). But again, demonstrating that experiences of emotion are distorted in people with schizophrenia does not equate to empathy being fundamentally lacking in this patient group.

In short, while schizophrenia and emotional processing has been examined in the literature, the lack of empirical evidence addressing schizophrenia and empathy means any association between the two has yet to be established. Although the common finding of impaired ToM in schizophrenia may suggest empathic difficulty, this assumes a somewhat dependent relationship between the two. This may not be the case if, as some research has suggested, there are two functionally separate neural networks, one connecting circuits crucial for ToM and self-monitoring, and the other involved in emotional recognition, a function presumably necessary for empathic reaction (e.g. Frith and Frith, 1999). Clearly more work needs to be done in this area.

ToM and Psychopathy

There have been repeated suggestions in the literature that a deficit in understanding the mental states of others might result in psychopathy. Feshbach (1987 cited in Richell et al, 2003) suggests that the ability to represent another's mind is a prerequisite for empathic responding, which in turn inhibits anti-social, violent behavior. Moreover there is evidence that the neural substrates of ToM involve the same neural circuits implicated in the pathogenesis of anti-social behaviour (Dolan and Fullam, 2004).

However other studies on adult psychopathic individuals have failed to demonstrate ToM impairments. Richell et al (2003) identified 19 men from a forensic institution who matched psychopathic criteria (as defined by the Hare Psychopathy

Checklist (PCL-R) (Hare, 1991) and compared their performance on an advanced ToM task (Reading the Mind in the Eyes test (Baron-Cohen, 1997)) with a sample of 18 non-psychopathic men recruited from the same institution. The results showed no significant differences in test performance, independent of intellectual ability.

Blair et al (1996) recruited 25 psychopathic individuals from prisons and secure hospitals and compared their performance on an advanced measure of ToM (The Happe test (Happe, 1994)) with 25 non-psychopathic incarcerated controls. The task involved reading 24 stories which described naturalistic social situations. The participants had to either interpret the behaviours of the characters or what they said or predict how they would hypothetically act. The stories would typically involve some form of deception, for instance, a soldier deliberately giving inaccurate information to the enemy. The study revealed two main findings. Firstly, the psychopathic sample did not show any ToM deficits compared with the control group, indeed they were more frequently correct (although not significantly) than the controls and used more mental state justifications. A second finding was that the psychopathic group performed significantly better than Happe's (1994) high functioning adult autistic population. Based on these findings the authors concluded that the individuals with psychopathy did not display impairments in ToM.

Dolan and Fullam (2004) compared an incarcerated sample of Anti-Social Personality Disordered (ASPD) individuals with a sample of healthy controls on a battery of ToM and empathy tasks (first and second order false belief tasks, faux pas tasks and a facial emotional expression task). The ASPD group was screened

for psychopathic traits using the Hare Psychopathy Checklist: Screening Version (PCL-SV, Hart et al, 1990) and divided into two groups according to whether their scores exceeded the cut-off point assigned as a diagnosis of psychopathy. The authors did not find any gross impairments on first and second order false belief tasks between the groups (control v. psychopath v. no psychopath), but did show that both psychopathic and non psychopathic ASPDs performed worse than healthy controls on the more subtle faux pas task, independent of IQ. However, it is interesting to note that the study did not detect any significant differences between the groups in their ability to detect and understand the faux pas, only in relating how the members of the story felt once the faux pas had been made. The authors concluded that this perhaps suggests an indifference to the impact of the faux pas rather than an ability to interpret it. Limitations of the study included using a relatively small control sample that was all recruited from ancillary staff working in the secure hospital settings or prison. There may have also been a ceiling effect for the basic ToM tasks. However, of particular interest was the finding that the ASPD group with psychopathic traits performed slightly better on some areas of complex emotional recognition than the healthy controls. It could therefore be argued that an intact ToM in people with psychopathy may have an adaptive function in terms of manipulating victims and maintaining a criminal lifestyle. This may be an area of future interest.

Hence it appears there is a consensus that individuals with psychopathy do not display impaired ToM. Indeed, the implication may be that they have a marginally superior ToM than the average population, which feasibly may be used to enhance victim manipulation. Bjorkqvist et al (2000), argue, that social intelligence

(defined as the ability to analyze the social behaviour of others) is required for all types of conflict behaviour, anti-social as well as pro-social behaviour. While some work implies that psychopaths may have difficulties in understanding subtle social blunders, it would appear that these difficulties are more reflective of an inability to appreciate the emotional impact of them rather than the ability to cognitively detect them. This would be consistent with Marshall's (1995) aforementioned empathy model, which proposes that the ability to adopt the perspectives of others is a sub-component of empathy that precedes emotional response.

Empathy and Psychopathy

Much research has indicated that psychopathy may be best regarded as a disorder of emotional empathy (e.g. Soderstrom, 1991). Indeed Hare's (1991) construct of psychopathy emphasises empathy deficit as a core interpersonal feature of the disorder and a necessary element in terms of diagnostic criteria. According to Soderstrom (2003) psychopathy is characterized by dysfunction of the social brain, where the emotional structures necessary for the development of empathic attitudes and responses are fundamentally deficient. Blair (2005) also argues that psychopathy is a proto-typical disorder associated with empathy dysfunction and suggests that the ability to inflict harm on others is a profound indicator of empathic failure. His 'Violence Inhibition Mechanism' (VIM) model postulates that psychopathic behaviours and low empathy result from a failure of basic emotions to trigger autonomic arousal and behavioural inhibition (Blair, 1995).

There is considerable evidence from neuro-biological work to support the association between psychopathy and impaired empathy. For instance research with psychopaths has shown low electro dermal responses to different emotional

stressors and reduced startle reflex potentiation during aversive picture viewing (Habel et al 2002). Suggesting differences in cerebral lateralization, Day and Wong (1996, cited in Habel et al) also demonstrated that psychopaths failed to show normal left visual advantage that healthy controls demonstrate when presented with emotionally negative words. Using single photon emission computerized tomography (SPECT) to delineate the neurobiological substrates that modulate semantic and affective processing, Intrator et al (1997, cited in Habel et al, 2002) found that there were increases in blood flow in sub cortical regions of psychopaths' brains compared to controls during the processing of emotional words. The authors argued that the increased blood flow could be explained by the extra effort put in by the psychopaths to perform the task successfully, indicating a basic difficulty with processing of emotional words. However, it is important to acknowledge that these studies are demonstrating neuro-biological abnormalities observed in processing emotional stimuli. It is perhaps premature to assume that these findings are necessarily evidence for impaired empathy.

It has been suggested that primary amygdala dysfunction may be associated with fearlessness, empathy problems and impaired ability to accurately interpret the emotions of others (Soderstrom, 2003). For example, amygdala lesions in humans have been shown to impair the capacity to recall emotional material and reduce the capacity to develop conditioned automatic responses (Blair, 2005). Specific to psychopathy, research has shown that psychopaths have reduced amygdaloidal volume relative to controls (Tiihonen et al, 2000, cited in Blair, 2005) and reduced amygdala activation during emotional memory (Kiehl et al, 2001). Soderstrom (2003) also cites a functional magnetic resonance imaging study of affective memory activation in psychopathy, which demonstrated reduced activation of the

amygdala/hippocampus formation but increased cortical activity in other fronto-temporal areas. This increased cortical activity was explained in terms of non-limbic cognitive strategies to process affective words. However while this possibly reflects a psychopathic difficulty with processing emotions (a necessary component of empathy according to Davis (1983) and Marshall et al (1995)), it may also be reflective of problems with emotional memory and not therefore indicative of an empathy deficit.

Directly tapping into the construct of empathy is previous research showing that psychopaths demonstrate reduced autonomic responses to stimuli associated with the distress of others (e.g. Aniskiewicz, 1979, cited in Blair, 2005). Moreover psychopathic personalities in children have been associated with diminished autonomic responses to sad expressions (e.g. Blair 1999). Both adults and children with psychopathic traits have displayed difficulties in recognising fearful expressions (Blair 2005), while there is also some tentative evidence that the recognition of disgust is also impaired in this group (Kosson, et al 2002). Conversely no research has yet emerged which looks at problems with processing angry, happy or surprised expressions. Again, however, these studies are focusing on only one sub-component of empathy, i.e. emotional recognition, and not other possible components of the construct.

Habel et al (2002) presented a facial discrimination test between 17 psychopathic individuals and 17 non-psychopathic healthy controls. The task required each participant to discriminate between neutral, happy and sad faces. The results indicated impaired emotion-discrimination performance in psychopathic personality compared with healthy controls. Interestingly however, the psychopaths who

scored higher on emotional detachment (factor 1 of the PCL-R) performed better than the psychopaths who primarily demonstrated anti-social traits (factor 2 of the PCL-R). The authors concluded that this correlation may be explained in terms of 'the heightened desire and ability of psychopaths to manipulate those around them' (p.399).

On the other hand, Dolan and Fullam (2004) concluded that ASPD patients with psychopathic traits did not have marked difficulties in reading basic or complex emotions. On the contrary their psychopathic group performed slightly better than healthy controls in some areas of complex emotional recognition. Nevertheless, this again conflates the constructs of emotion recognition and empathy. Psychopathic performances were, however, poorer on the faux pas task, which the authors argue reflected a difficulty in true empathy as it showed an indifference to the impact on others of potentially distressful situations.

In summary, it is widely assumed that psychopathy is characterised by difficulties in empathy, probably as a result of amygdala dysfunction. Individuals with psychopathy appear to demonstrate impairments in emotional processing, particularly expressions of fear and sadness, which Blair (2005) argues 'lies at the heart' of psychopathic disorder (p. 711). Certainly an inability or indifference to appreciating the distress of others will not inhibit aggressive or violent behaviour. However the evidence appears somewhat inconclusive. Firstly, the recognition of all emotional expressions may not be impaired. Moreover the concentration in the literature on emotional recognition as an indicator of empathy perhaps neglects other markers of the construct like empathic behavioural response or subjective understanding of adversity as experienced by others. According to Davis (1983)

and Marshall et al's (1995) models, empathy entails various components which involve having concern for others and acting in a way that is congruent with that concern. These are possible areas for future work.

Schizophrenia and Psychopathy

Despite the media's propensity to associate severe mental disorders, notably schizophrenia, with violent crime (British Psychological Society, 2000), most people with schizophrenia are not violent and most violence in the community is not attributed to schizophrenia (Nolan et al, 1999).

However, Mullen (2006) argues that there is a correlation between schizophrenia and violent behaviour which is both clinically and socially significant. He cites studies which demonstrate that 5-10% of those awaiting trial for murder in the Western world will have a schizophrenic disorder and suggests that both researchers and professionals routinely minimise or dismiss the association between violence and schizophrenia. However, while Mullen acknowledges that active symptoms have a role to play in higher increases of violence, he points out that various 'confounders' and 'mediators' are equally crucial. Mediators, he argues, are products or effects of the schizophrenia which directly or indirectly contribute to violence. Confounders, on the other hand, create an apparent correlation by relating independently to both schizophrenia and violence. In practice there is often a crossover between the two, with factors like substance misuse, social context and personality operating as both mediators and confounders.

It may be that demographic factors like substance abuse and low socio-economic status (Norko et al 2005) and being young and male with a history of violent

behaviour (Mullen, 2006) may contribute more significantly to the overall rate of violence than mental health variables (Norko et al 2005). Previous history of violent behaviour and being young and male also seems to be associated to higher rates of violence observed in people with a major mental illness. On the other hand, some research has suggested that differences in the rate of violence among mental health patients and between patient and community control groups cannot be explained by epidemiologic factors alone (e.g. Link et al, 1992). Link and Steuve (1994), for instance, suggested that specific types of active psychotic symptoms categorised as “threat/ control/ override” (TCO) may increase the likelihood of violence. TCO symptoms refer to beliefs that others intend to inflict harm on oneself or control ones thoughts. Using Data from an earlier Epidemiological Catchment Area Survey, Swanson et al (1996) reported that respondents with TCO symptoms were twice as likely to report violence, a finding later replicated by Link et al (1998).

However there is some conflicting data in the literature. MacArthur’s Violence Risk Assessment Study (cited in Norko et al, 2005), for instance, which involved nearly 1000 psychiatric patients discharged into the community and followed for one year, concluded that the prevalence of violence among discharged patients was not significantly different from that of community controls (when substance misuse was controlled for). Moreover the previously reported correlation of TCO with violence was not observed when self-report measures of symptoms were replaced by trained interviewer ratings. On the contrary when trained interviewer ratings were used to label symptoms a negative correlation was found between both TCO symptoms and a diagnosis of schizophrenia and violence.

Whilst the association of psychopathy and violence is well documented (e.g. Nolan et al, 1999), the relationship between psychopathy and schizophrenia is relatively under explored (Nolan et al, 1999). According to some literature, in general forensic settings the overlap between the two disorders does not exceed 4% (Nolan et al, 1999). However a recent British study suggested that the percentage of co-morbid psychopathy and major mental illness in High Security Mental hospitals is nearer 23% (Blackburn, et al, 2003). Tengstrom et al (2000) report percentages of 33% in samples of violent patients with schizophrenia.

To investigate violent behaviour and psychopathy among patients with schizophrenia or schizoaffective disorder, Nolan et al (1999) identified violent and non-violent patients by reviewing detailed hospital charts and records of arrests. Measures of psychopathic traits were taken from each group using the PCL: SV. Perhaps not surprisingly, the results showed that the violent group scored higher on part two of the PCL-SV, which measures anti-social behaviour, compared to the non-violent patients. However the authors also found that the violent patients scored higher on items identifying interpersonal and affective traits, which are traits that do not necessarily have any association with violence. This perhaps implies that their violent tendencies were more related to psychopathic traits rather than their mental illness. Coupled with the significant negative correlation found between the age of onset of psychiatric symptoms and PCL:SV scores, the authors concluded that patients who are both schizophrenic and psychopathic may have a personality disorder that precedes the emergence of psychotic symptoms. However it is important to note that this study was limited by a relatively small sample size

and strict inclusion criteria.

Joyal et al (2004) argue that the occurrence of violence among offenders with schizophrenia may depend on an additional diagnosis of antisocial personality disorder, for which most psychopaths would meet criteria of. From a developmental perspective, Hodgins and Cote (1993, cited in Tengström et al, 2000) have argued that, as anti-social behaviour precedes the onset of major mental disorder by many years, then criminal or violent behaviour exhibited by people with schizophrenia should be associated with the personality disorder and not the psychiatric illness itself.

In terms of continued violent behaviour in patients with schizophrenia, Tengstrom et al (2000) followed up a group of male violent offenders with a diagnosis of schizophrenia over a mean post detainment time of 51 months. They found that psychopathy, as defined by exceeding the cut-off score on the PLC-R, was an important factor in predicting violent recidivism. This supported previous research which suggested that PCL-R ratings were positively correlated with both violent and non-violent recidivism among patients with schizophrenia.

In summary, although active schizophrenia symptomatology is associated with an increased risk of violence (especially TCO symptoms), other variables like substance misuse, socio-economic status, age and gender may be as good or better predictors of violent behaviour in this patient group. The existing literature also appears to suggest that psychopathic traits are related to the higher incidences of violence observed in schizophrenia populations and may be fundamentally distinct

from psychotic illness. Moreover as psychopathic disorder is associated to personality and interpersonal styles it is likely to precede the emergence of psychosis.

The relationship between Schizophrenia, Psychopathy and Theory of Mind and Empathy

There is a notable absence of literature examining ToM and empathy in individuals with co-morbid schizophrenia and psychopathy . The available relevant papers are reviewed below, before highlighting areas of future possible research.

Murphy (2004) examined ToM functioning in psychiatric patients with Asperger's syndrome, schizophrenia or personality disorders (dissocial and borderline) in a high security setting. The three patient groups were presented with the Reading of the Mind in the Eyes task (Baron-Cohen et al , 1997), and a modified advanced ToM test, which comprised six stories targeting the ability to appreciate false beliefs. The results indicated that although all the patients tended to perform worse than non-forensic/non-psychiatric controls, the Asperger and schizophrenia groups performed significantly worse on each measure than the personality disordered group (specifically anti-social or borderline personality disorders). However it is important to note that this study involved personality disordered samples and not individuals displaying traits of psychopathy.

Abu-Akel and Abushua'leh's (2004) were also interested in the role of ToM and empathy in violent behaviour in individuals with a diagnosis of paranoid schizophrenia. Data were collected from 24 hospitalized adult males, divided into

violent and non-violent groups based on their history of committing violent acts against others, all of whom met ICD-10 criteria for paranoid schizophrenia. ToM was assessed using a first and second order ToM task, while empathy was measured using a faux pas task. The authors found that the violent patients performed better on higher-level mentalizing tasks (second order ToM and cognitive-mental-state understanding) compared to the non-violent group, but worse on the empathy task. Their overall conclusions were that violence in paranoid schizophrenia was related to good mentalizing abilities and poor empathy skills. However it should be noted that in this study the authors used the terms 'violence' and 'offending' interchangeably, an issue which Murphy (2004) pointed out as inaccurate as offending behaviour does always equate to interpersonal violence. Moreover, while Abu-Akel and Abushua'leh suggested that violent patients with paranoid schizophrenia have a profile resembling psychopaths, no measures of psychopathy were taken in their study.

Fullam and Dolan (2006) examined whether psychopathic traits contributed to differences in emotional processing in patients with schizophrenia. They categorised patients with schizophrenia into high, medium and low psychopathy groups and presented them with an animated facial affect recognition task. Consistent with previous research (e.g. Blair, 1999), the authors found that the high psychopathy group were significantly more impaired in the recognition of sadness, compared to patients with lower psychopathy scores. In contrast no significant relationship was observed between schizophrenia symptomatology and accuracy of facial recognition. Whilst cautious not to interpret this as evidence for differences in empathy, the findings imply that the ability to recognise negative emotions in

others (presumably necessary for empathic response) may be associated with psychopathy and not schizophrenia.

In summary, although limited by an obvious lack of research, there may be some tentative suggestion that the presence of psychopathy buffers against impaired ToM in patients with schizophrenia but impairs the ability to process negative emotions. While this may be consistent with research focusing on ToM and empathy in psychopathy and schizophrenia separately, why the same profile is found in comorbid presentations is less clear. The research reviewed here perhaps suggests that psychopathic traits define empathic and ToM functioning in patients with schizophrenia. On the other hand patterns of empathy and ToM may depend on which disorder is most prevalent in the individual. There is clearly a need for further clarity and empirical support in order to substantiate these ideas.

Conclusions

It would appear from the literature that both schizophrenia and psychopathy are disorders which involve distinctive impairments in ToM and empathy respectively. There seems to be little disagreement that ToM deficits are a marker of schizophrenia but are not observed in psychopathy, where ToM is generally assumed as intact, if not marginally superior to the general population. With regards to empathy, on the other hand, while a consensus of how empathy presents in schizophrenia has yet to emerge, there is general agreement that psychopaths have discernible problems in empathic expression, probably as a product of amygdala dysfunction.

As empathy is often viewed as an inhibitor of aggressive and violent behaviour

(Clarke, 1980) its apparent impairment in psychopaths is perhaps not surprising. However why the ability to take another's perspective, clearly an empathic requisite, may be intact in psychopaths has not been directly answered in the literature and introduces the question of how empathy relates to perspective taking abilities in this patient group. Some theoretical explanations have emerged. For instance Davis (1983) and Marshall et al's (1995) models suggest impairments can occur at different stages of processing (i.e. intact perspective taking but impaired emotional concern). Perhaps the key deficits involved are not an inability to understand emotional expression but a failure to subjectively feel concern about the impact of adversity on potential victims.

Ward, et al (2000) point out that, while the majority of empathy theories stress the importance of perspective taking, little attention has been paid to what mental states are involved in this process. They suggest that the ability to infer another's experiences possibly involves identifying different emotional states, beliefs and attitudes, each of which may be contextually determined and play a different role in terms of generating response. It is therefore possible that the psychopath has an intact ToM in some conditions but displays subtle deficits or distortions in other situations, which inhibit empathic behaviour. Unfortunately until some consensus has been reached about the relationship between empathy and ToM these questions will remain largely unanswered.

Of particular interest in the present thesis is how these findings relate to presentations of co-morbid psychopathy and schizophrenia. For instance, perhaps the presence of schizophrenia reduces ToM in the psychopath. If the apparatus

necessary for deceit and manipulation is lacking, the manifestation of psychopathic traits in this population may be predominantly behavioural rather than interpersonal. Alternatively perhaps the presence of psychopathy in people with schizophrenia acts as a buffer to problems in reading another's mind. On the other hand, how empathy and ToM impairments are exhibited may depend on which disorder is most prevalent in the individual. Further work is clearly needed in order to clarify these ideas.

Methodological and conceptual issues

Research in this area inevitably involves various methodological and conceptual issues . Firstly, not only may a patient with severe co-morbid disorders be hard to engage, defining which disorder is most prevalent in order to understand differences in mentalizing skills may be problematic.

One specific conceptual issue seems apparent. To date no real consensus has emerged deciding whether ToM and Empathy are related constructs or intrinsically distinct from another. Many instruments of measurement appear to cloud or merge the abilities involved. For instance tools designed to measure ToM frequently employ tasks which require facial expression recognition (e.g. Dolan and Fullam, 2004), an ability often associated with empathy in the literature (e.g. Blair, 1999). While this may not be a problem if ToM is interpreted as a sub-component of empathy (e.g. Marshall et al, 1995), if the two processes are deemed fundamentally discrete, forms of measurement may need to be more finely tuned. Moreover, it has been suggested that empathy is a multi-component concept, however to date there does not appear to be any standardised tool which comprehensively measures each sub-component (e.g. cognitive, affective, motor, Blair 2005)). For instance if one

instrument could systematically measure each proposed type or stage of empathy than a clearer picture may emerge to how each may or may not relate to one another.

In addition, the legalities and penal system involved with studies using criminal populations or patients in secure units may cast doubt on the validity of findings. This is perhaps most evident when trying to use self-report methods for measuring empathy (e.g. Dolan and Fullam, 2004). Patients or prisoners are routinely aware of how their responses may affect possible sentencing or discharge and may therefore portray themselves in an inaccurately good light. For similar reasons this possibility of ‘faking good’ or indeed ‘faking bad’, may also effect the validity of using self-report measures for recording psychotic symptoms.

Suggestions for further work in this area

To date the bulk of research exploring the links between psychopathy and schizophrenia has tended to concentrate on violence, and criminal and personality profiles and not in possible differences in ToM or empathy. A direction of further investigation may be to explore whether these abilities differ depending on which disorder is most prevalent (i.e. whether psychopathic traits or psychotic symptoms were most characteristic in an individual’s presentation). This may be valuable in terms of formulating individual treatment programmes (i.e. mentalization enhancement vs. empathy training).

Neuro-cognitive science or studies using psycho-physiological measures of emotional responsivity may also expand our knowledge in this area. For instance, if the amygdala and frontal cortex are salient in the neural networks sub-serving

emotional recognition, imaging studies may offer the clarity needed to understand the empathic deficits in anti-social populations who appear to have intact ToM ability.

Other possible suggestions for further research may include investigating whether ratings of psychopathy correlate positively with ToM ability and negatively with empathy scores, and whether schizophrenia symptoms correlate negatively with ToM and Empathy. This could feasibly be done by using standardized instruments to measure ToM and Empathy in a sample of forensic in-patients with schizophrenia who have also been scored on psychopathic traits.

Clinical implications

The theoretical and clinical implications from continued work in this area are numerous. For example if differences in ToM and empathy in patients with schizophrenia (who do not predominantly display TCO symptoms) are found to be associated with psychopathy, a potential distance between psychosis and violent behaviour may be highlighted. In terms of stigmatization of major mental illness this may be a particularly important finding.

The link between ToM and later onset of schizophrenia (Schiffman et al, 2004) perhaps suggests a role for routinely investigating ToM impairments in children. Premature findings of profound impairment (where autistic spectrum is not implied) may yield insight in to identifying vulnerable individuals and may also have implications for early psychosis prevention programmes. Moreover if empathy is indeed found to be facilitated by ToM, improving ToM abilities within a standardised school curriculum may facilitate positive social integration for all

children, regardless of future psychiatric problems.

Much work on empathic deficits in psychopathy (e.g. Soderstrom, 2003) has indicated a potential for initiating empathy training programmes in secure units. However, furthering our knowledge of a psychopath's mentalization profile may bring the efficacy of empathy training with this patient group into question. If the fundamental apparatus necessary for empathy is faulty in presentations of psychopathy, the ability to develop 'true empathy' maybe questionable. As the research implies that psychopaths have intact ToM, it could be argued that empathy training may serve to facilitate a 'pseudo empathy, which could then be used as a further tool for victim manipulation.

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PART 2
DOES THEORY OF MIND AND EMPATHY DIFFER IN
PATIENTS WITH A DIAGNOSIS OF SCHIZOPHRENIA
DEPENDING ON THE PREVALENCE OF
PSYCHOPATHIC TRAITS

Abstract

The relationship between psychopathy, schizophrenia, empathy and Theory of Mind (ToM)) was studied in a group of forensic in-patients with a diagnosis of schizophrenia. ToM was measured using the 'Reading of the mind in the Eyes' test (Baron-Cohen, 1997), empathy was measured using the Empathy Quotient (Baron-Cohen, and Wheelwright, 2004), schizophrenia symptoms were recorded via clinical team testimony and psychopathy was measured using the Hare Revised Psychopathy Checklist (screening version) (Hart et al, 1995). A battery of cognitive tests was also administered to control for confounding affects of IQ, memory and executive functioning. It was predicated that ratings of psychopathy would correlate positively with ToM ability and negatively with empathy scores, and that ratings of schizophrenia symptoms would correlate negatively with ToM. It was also expected that empathy would positively correlate with ToM, but only when psychopathic traits were absent. The relationship between schizophrenia and empathy was left undetermined. The results suggested some association between improved ToM and psychopathy in patients with schizophrenia but was unable to demonstrate an association between empathic problems and either psychopathy or schizophrenia. A trend towards an association between ToM and empathy was also observed, however this appeared to be independent of psychopathy. The implications of the findings were discussed in relation to the wider context.

1. INTRODUCTION

This research aims to investigate the under-explored relationship between psychopathy, schizophrenia, empathy and Theory of Mind (ToM). Previous work has shown that (ToM) is impaired in people who have a diagnosis of schizophrenia but intact in people with psychopathy (e.g. Blair, 2005). Research has also suggested that empathy is impaired in people with psychopathy, but little has emerged investigating the relationship between empathy and schizophrenia. How these four concepts interrelate therefore poses an interesting clinical question.

1.1. Background

Schizophrenia and psychopathy

In general forensic settings the overlap between schizophrenia and psychopathy ranges between 4% (Nolan, et al, 1999) and 33% (Tengstrom et al, 2003).

Schizophrenia is categorised in DSM-IV (American Psychiatric Association, 1994) as an Axis 1 major psychiatric disorder. Diagnostic criteria include symptoms of delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behaviour and negative symptoms (e.g. psychomotor slowness, affective blunting and intellectual deficit) (American Psychiatric Association, 1994). These symptoms must cause a significant disturbance to social, interpersonal and occupational functioning and persist continuously for at least 6 months (American Psychiatric Association, 1994).

In comparison, psychopathic disorder is somewhat less clearly defined and does not

appear in DSM-IV. The Mental Health Act (1983) defines psychopathic disorder as a persistent disorder, independent of intellectual impairment, which results in aggressive or irresponsible behaviour. Features of psychopathy include interpersonal, affective and lifestyle factors. Interpersonal traits are described as grandiose, superficial, manipulative and callous, affective factors include shallow labile emotions, lack of empathy and remorse, weak emotional ties and little subjective distress. Lifestyle features involve impulsivity, violation of social norms and irresponsible conduct (Hare, 1999).

How people diagnosed with these disorders understand the thoughts and feelings of others has attracted much interest in the literature.

Theory of Mind and Empathy

Theory of Mind (ToM) is a cognitive skill, defined as the ability to interpret observable behaviour in order to represent the mental states of others and be able to predict their future behaviour (Premack and Woodruff, 1978). The concept has been around since the late 1970s, first in the context of work with chimpanzees (Premack & Woodruff, 1978) and later in research with childhood autism (Baron-Cohen et al 1985).

Fodor's (1992) modular theory of ToM argues that the ability to impute mental states is innate and develops naturally via a process of neural maturation. This model suggests there are cognitive structures specifically dedicated to attributing mental states of others, which become activated by certain events. Evidence to support these ideas comes from neuro-imaging studies, which have indicated specific brain regions, (e.g. the medial prefrontal cortex and the temporal-parietal junction), as important for representation of the mental states of others (e.g. Lee et

al, 2004).

Although a coherent view of empathy has yet to emerge, the concept has been generally defined as the ability to experience the emotions of another and behave compassionately (e.g. Fisher and Howells, 1993). Many researchers generally accept that empathy involves both cognitive and affective, along with communicative and relational elements (e.g. Blair 2005). Davis (1983), for instance, proposes that empathy consists of four distinguishable, yet overlapping constructs ('perspective taking', 'fantasy', 'empathic concern' and 'personal distress'). Similarly, Marshall et al (1995) understands empathy as involving an ordered progression of 'emotion recognition', perspective taking', 'emotional replication' and 'response decision'. Both the ability to discriminate emotion and adopt the perspective of another is said to be necessary for the ability to reproduce the emotion of a target other ('emotion replication'). 'Response decision' relates to the decision to act or not act, based on how the observer has formulated the situation.

Blair (2005) identifies three main neural divisions, which are partially dissociable from one another; cognitive, motor, and emotional empathy. Cognitive empathy concerns the ability to represent the internal states of others (effectively ToM), motor empathy refers to the mirroring of the motor responses of another, while emotional empathy involves some sort of appropriate response by the observer to the emotional displays of the other.

These ideas suggest that impairments in 'true' empathy can occur at any stage (or component) in the procedure. Essentially empathy in its conceptual entirety

requires the presence of all aspects and faulty processing at any stage may impair appropriate response (Blair, 2005).

Theory of Mind and Schizophrenia

Frith and Frith (1991) suggest that problems with ToM result in cognitive misrepresentations of one's own and other's mental states, which may account for some of the positive and negative symptoms of schizophrenia. For instance, strongly held delusional beliefs may be the result of a difficulty in distinguishing between subjective and objective reality. Moreover an inability to interpret the social signals or intentions of others may lead to communication problems and eventually formal thought disorder (Brüne, 2005).

ToM impairments in people with schizophrenia have been shown to be specific rather than reflective of general cognitive impairment (e.g. Harrington et al, 2004; Pickup and Frith, 2001). For instance research has demonstrated that people with schizophrenia are specifically impaired on tasks that require ToM, independent of intelligence or executive functioning (e.g. Langdon et al, 2001). However there is some ambiguity as to whether the deficit is best understood as a trait rather than state dependent variable (see Brüne, 2005 for a review). ToM deficit in schizophrenia has also been associated with impaired social competence in the community (Roncone et al 2002)), impaired strategic social reasoning (Mazza et al, 2003) and poorer childhood social functioning (Schenkel et al, 2005).

Empathy and Schizophrenia

Few published studies have investigated the understanding of 'empathy' per se in individuals with schizophrenia. However, as it has been suggested that ToM is a cognitive sub-component of empathy (Blair, 2005), the implication may be that

people with schizophrenia may have also empathy problems. Abu-Akel and Abushua'leh (2004) demonstrated a negative correlation between empathy and ratings on the Brief Psychiatric Rating Scale (BPRS, Overall and Gorman, 1962), which led them to deduce that severity of illness was related to severity of empathic impairment in schizophrenia. However, in this study empathy was measured using a second order ToM task (recognition of faux pas) and not a tool designed to measure empathy specifically. A second order ToM task relates to an understanding that another may hold a false belief about the mental state of another, thus the authors confounded measurements of empathy and ToM.

A recent study by Montag et al (2007) looked at empathic abilities in schizophrenia using the Interpersonal Reactivity Index (IRI, Davis, 1983), which is a self-report measure assessing perspective taking, empathic concern, personal distress and fantasy, and found that self-ratings of affective empathy (i.e. concern for others) did not differ compared to matched healthy controls. They did, however, find a significant reduction of cognitive empathy with advancing duration of illness.

Although 'empathy' as a concept itself has rarely been looked at in association with schizophrenia a large literature on understanding emotion recognition in schizophrenia has emerged. For instance, various studies have shown that people with schizophrenia perform poorly on facial expression perception (Brune, 2005) and tasks, which require the identification and differentiation of intensity of emotions (Gur et al 2006). Reports have also suggested that people with schizophrenia have distorted experiences of emotion, with some patients experiencing negative emotions more intensely and positive emotions less intensely than healthy controls (see Lee et al, 2004, for a review).

ToM and Psychopathy

There have been repeated suggestions in the literature that a deficit in understanding the mental states of others may be related to psychopathy, for instance, the neural substrates of ToM may involve the same neural circuits implicated in the pathogenesis of anti-social behaviour (Dolan and Fullam, 2004). However other studies on adult psychopathic individuals have failed to demonstrate ToM impairments. Richell et al (2003), for instance, found that ToM test performance (as measured using the Reading of the Mind in the Eyes task (Baron-Cohen, et al, 1997) did not differ between psychopathic and non-psychopathic incarcerated men. Blair et al (1996) also found no differences in ToM ability between psychopaths and healthy controls, on the contrary, the psychopathic group was more frequently correct (although not significantly) than the controls and used more mental state justifications. Although not supported by empirical evidence, this may suggest that psychopaths may have a slightly superior ToM than the average population, which may be used as a skill to manipulate victims (Soderstrom 2003). Bjorkqvist et al (2000), argue that social intelligence is required for all types of conflict behaviour, anti-social as well as pro-social behaviour.

Empathy and Psychopathy

Much research has indicated that psychopathy may be best regarded as a disorder of empathy (e.g. Soderstrom, 2003). Hare's (1991) definition of psychopathy emphasises an empathy deficit as a core interpersonal feature of the disorder and a necessary element in terms of diagnostic criteria. According to Soderstrom (2003) psychopathy is characterized by dysfunction of the social brain where the emotional

structures necessary for the development of empathic attitudes and responses are fundamentally deficient. Blair (2005) also argues that psychopathy is a prototypical disorder associated with empathy dysfunction and suggests that the ability to inflict harm on others is a profound indicator of empathic failure. His 'Violence Inhibition Mechanism' (VIM) model postulates that psychopathic behaviours and low empathy result from a failure of basic emotions to trigger autonomic arousal and behaviour inhibition (Blair, 1995).

It has been suggested that primary amygdala dysfunction may be associated with fearlessness, empathy problems and impaired ability to accurately interpret the emotions of others (Soderstrom, 2003). Previous research has also shown that both adults and children with psychopathic traits have displayed difficulties in recognising fearful expressions (Blair 2005).

On the other hand, Dolan and Fulham (2004) did not detect any significant differences in empathic concern between psychopaths and non-psychopathic controls. However, here the authors used the aforementioned IRI, which is a self-report measure of empathy and therefore open to social desirability bias.

Co-morbidity of Schizophrenia and Psychopathy

Despite the media's propensity to associate severe mental disorders, notably schizophrenia, with violent crime (British Psychological Society, 2000), it is important to note that most people who have a diagnosis of schizophrenia are not violent. However there may be correlation between schizophrenia and violent behaviour, which is both clinically and socially significant (Mullen, 2006). Link and Steuve (1994), for instance, suggest that specific psychotic symptoms, which relate to beliefs that others intend to inflict harm on oneself or control ones thoughts

("threat/ control/ override" (TCO) symptoms) may increase the likelihood of violence. However, others suggest that demographic factors like substance abuse and low socio-economic status may contribute more significantly to the overall rate of violence than mental health variables (Norko, et al 2005). Previous history of violent behaviour and being young and male also seems to be associated to higher rates of violence observed in people with a major mental illness (Mullen, 2006).

The relationship between psychopathy and schizophrenia, on the other hand, represents an under explored field of study. Joyal et al (2004) argue that the occurrence of violence among offenders with schizophrenia may depend on an additional diagnosis of antisocial personality disorder, for which most psychopaths would meet criteria of. From a developmental perspective, Hodgins and Cote (1993, cited in Tengström et al, 2000) have argued that, as anti-social behaviour precedes the onset of major mental disorder by many years, then criminal or violent behaviour exhibited by people with schizophrenia should be associated with the personality disorder and not the psychiatric illness itself.

The relationship between Schizophrenia, Psychopathy, ToM and Empathy

There is a notable shortage of literature examining ToM and Empathy in individuals with co-morbid schizophrenia and psychopathy. Abu-Akel and Abushua'leh (2004) investigated ToM and Empathy in violent and non-violent patients with schizophrenia and found that the violent patients performed better on ToM tasks compared to the non-violent group, but scored worse on the empathy task (as measured using a recognition of faux pas task). Their overall conclusions were that violence in paranoid schizophrenia was related to good mentalizing

abilities and poor empathy skills. However, not only did they measure empathy with a task often used for measuring ToM, thus confounding the variables, while they suggested that their violent sample had a profile resembling psychopaths, no measures of psychopathy were taken in their study.

Fullam and Dolan (2006) categorised patients with schizophrenia into high, medium and low psychopathy groups using the Psychopathy Checklist Screening Version (PCL-SV, Hart et al, 1995) and presented them with an animated facial affect recognition task. The authors found that the high psychopathy group were significantly more impaired in the recognition of sadness compared to patients with lower psychopathy scores. In contrast, no significant relationship was observed between schizophrenia symptomatology and accuracy of facial recognition. Whilst cautious not to interpret this as evidence for differences in empathy, particularly as other studies have shown impaired facial expression recognition in schizophrenia, (e.g. Brüne, 2005) the findings imply that the ability to recognise negative emotions in others (presumably necessary for empathic response) may be associated with psychopathy and not schizophrenia.

1.2 . Aims of the study

The principle objective is to examine whether patients who have a diagnosis of schizophrenia differ in ToM or empathy abilities depending on whether they score high or low on a psychopathy measure.

It is anticipated that the project will provide valuable data that will enable us to tease apart the relative contributions of psychopathic traits and psychotic symptoms

to ToM and empathy abnormalities in patients. Studies to date have generally looked at ToM or empathy in either psychopathy or schizophrenia patients. This is the first attempt to combine these themes into one study. This will fill an important gap in the research literature and will inform future studies investigating the general issues of violence in schizophrenia, its prevalence and causes.

1.3. Hypotheses

- 1) Given the research, which suggests that ToM is intact in psychopaths, if not marginally superior, compared to non-psychopaths (e.g. Blair, 1996) , it is predicted that ratings of psychopathy (using the PCL-SV) will correlate positively with ToM ability.
- 2) As empathy has been shown to be impaired in this group (e.g. Soderstrom, 2003), it is predicted that psychopathy scores will negatively correlate with empathy scores.
- 3) In accordance with studies demonstrating that ToM is impaired in schizophrenia (Pickup and Frith, 2001), it is predicted that ratings of schizophrenia will correlate negatively with ToM. As there is inconclusive evidence regarding the relationship between schizophrenia and empathy, the association between empathic abilities and schizophrenia symptoms is yet to be determined.
- 4) As the models of empathy reviewed above (e.g. Blair, 2005) suggest that ToM is a component of empathy, it is also predicted that empathy scores will positively correlate with ToM scores.
- 5) However, as emotional empathy has been shown to be impaired in

psychopaths this trend will not be observed when psychopathic traits are present.

2. METHOD

The design was a cross-sectional correlation design.

2.1. Participants

Abu-Akel and Abushua'leh (2004) found a large effect size between violent and non-violent patients with schizophrenia on cognitive-mental-state understanding (with the violent group performing better). According to tables using multiple regression analysis with 4 variables, obtaining a large effect size with significance at 0.05 and power at 0.8, would require a sample size of 39.

A sample of 40 male participants (from 59 approached) was recruited from two forensic institutions: 32 patients from Camlet Lodge, Chase Farm Hospital and 8 from Broadmoor High Security Hospital. Initial selection criteria involved having a DSM-IV (American Psychiatric Association) diagnosis of schizophrenia and a forensic history. Exclusion criteria included an IQ < 70 (as measured using the Wechsler Adult Intelligence Scale, third edition (WAIS III, Wechsler, D, 1981), WAIS) and/or a history of leucotomy or head injury. In terms of sample ethnicity, 18 participants were Black African/Caribbean, 13 participants were White/British, 3 were Black/Mixed Heritage, 2 were Irish, 1 was Pakistani and 3 described themselves as 'Other'. All participants were competent in the English Language and aged between 18-65 years.

2.2. Materials

The following list describes the measures used and are provided in the order that they were administered.

i. Empathy Measure

Empathy was measured using the Empathy Quotient (Baron-Cohen and Wheelwright, 2004). This is a self-report measure involving 60 items, which requires the participant to rate whether they slightly agree, strongly agree, slightly disagree and strongly disagree with the statement. The items were designed to tap into both cognitive and affective components of empathy and involve statements like 'I really enjoying caring for other people and 'seeing other people cry doesn't really upset me'. It has been shown to have good test-re-test reliability and concurrent validity (Lawrence et al, 2004). To facilitate integrity in disclosure this measure was completed by the participants in private, prior to the administration of the other tests. Please see appendix 1 for a copy of the measure.

ii. Theory of Mind task

Theory of Mind was measured using the 'Reading of the Mind in the Eyes' test revised (Baron-Cohen, et al, 1997). This test involves showing participants 36 photographs of the eye region, each depicting various facial expressions. For each photograph the participant has to choose between four words, which they think best describes the cognitive emotions involved (e.g. insisting/friendly). This task is considered an advanced ToM tests as participants are required to locate themselves

in the mind of the person illustrated in the picture and attribute a relevant mental state to them. Please see appendix 2 for an example of the measure.

iii. Psychopathy Measure

The Psychopathy Checklist: Screening Version (PCL-SV, (Hart et al, 1990) was used to measure psychopathy traits. The PCL-SV has been shown to demonstrate good convergent and concurrent validity, good internal consistency and adequate interrater reliability (Hart et al, 1990). The measure involves rating individuals on 6 interpersonal/affective styles and 6 impulsive/antisocial behavioural items. Ratings are collated via interview and case note review. Scores of equal or below 12 are considered non-psychopathic, scores 13-17 may be indicative of psychopathy, while scores of 18 or above offer a strong indication of psychopathy (Hart et al, 1990). Please see Appendix 3 for breakdown of the checklist.

iv. Schizophrenia Symptomatology

Originally the study was designed to assess psychopathology using the Positive and Negative Syndrome Scale (PANSS, Kay, et al, 1987). However, after the first four interviews it was felt that there may have been an element of deception in the disclosures, which would have had contaminated the results. Thus, it was decided to rate symptomatology depending on the opinion of the participant's clinical team. The relevant clinical teams, which involved the Responsible Medical Officers (where available), nursing staff, psychology and occupational therapy, were asked whether the individual in question was demonstrating or reporting any psychotic or thought disordered behaviours at the time of testing. Participants were rated '1' if they were reported as experiencing active symptoms and '0' if they were reported

as being in remission. Abu-Akel and Abushua-leh (2004) also employed observer ratings as a measure of psychopathology. However they used the Brief Psychiatric Rating Scale (BPRS, Overall and Gorman, 1962), which again involves an element of self-report, and thus also vulnerable to social desirability bias.

The following list of instruments was administered to control for confounding effects of IQ, memory and executive functioning.

v. Measure of intelligence

IQ was measured using the WAIS III. This is a nationally standardized intelligence scale which measures verbal, performance and full scale IQ scores. A score of 100 is deemed average intellectual ability.

vi. Measure of memory

Memory was measured using the Rey Osterrieth Complex figure (RCFT, Rey and Osterrieth, 1993), which is a widely used neuropsychological test of visual perception and long term visual memory. Intercorrelations between the RCFT and other measures, in samples of both normal and brain-damaged subjects, have established good convergent and discriminant validity (Meyers and Meyers, 2005). The test involves copying a complex figure and then drawing it from memory, initially immediately and then after a five minute delay. The verbal fluency task filled the five minute delay.

vii. Measures of Executive Functioning

a. Verbal fluency (Animals and FAS)

For phonemic fluency, participants were given the letters F, A, and S and asked to generate as many words as possible in 60 seconds that began with each letter, excluding names and repetitions of the same word with different endings. For

semantic fluency participants were given Animal Fluency which required participants to name as many different animals as possible in 60 seconds, excluding species of birds or fish (see, Troyer, 2004).

b. Trails A and B test.

The Trails A and B test (taken from the Halstead-Reitan Test Battery (Jarvis & Barth, 1984)), is a test of visual-motor tracking. It is given in two parts (A and B). Part A consists of joining randomly scattered numbers in their numerical order. Part B consists of joining randomly scattered number and letters in their numerical and alphabetical order, alternating between numbers and letters. Although both tests employ working memory and processing speed, part B is thought to assess more selectively frontal lobe processes like set-shifting.

c. Stroop Neuropsychological Screening Test

The Stroop Test (Stroop, 1935) is an executive functioning test, which assesses simple attention, gross reading speed and divided attention abilities (Demakis, 2004). The first subtask shows colour words in random order, which the participant is required to read out, ignoring the colour that they are written in. Subtask 2 contains colour words printed in an incongruous ink colour and requires the participant to name the colour that the word is written in. This test requires the participant to inhibit an over learned response in favour of an unusual one.

2.3. Procedure

As the settings were both secure hospitals the recruitment procedures were somewhat problematic. For instance, as I was not employed by West London Mental Health Trust, gaining access to patients at Broadmoor was extremely difficult and required me to be escorted onto wards by appropriate employees of the

trust. Although access was not a problem at Camlet Lodge as I was on clinical placement there, recruitment difficulties also became evident as the patients were generally aware of my dual role as a clinician and suspicious about how participating in the research would be recorded on their file. Nonetheless, all participants were met with beforehand and provided with an information sheet, which outlined the details of the study (see appendix 4). Particular attention was drawn to the use of the PCL-SV as it is a tool typically used to diagnose psychopathy, which may have caused participants some concern. All participants were informed that their responses would be coded anonymously and no results on the PCL-SV would be interpreted in terms of diagnosis. Participants were advised that they could withdraw their participation, without consequence, at any time. Given the security restrictions imposed at Broadmoor Hospital no incentives (monetary or other) could be offered to participants.

Some of the data were gathered via existing case-notes and consultation with the relevant clinical teams. The interviews took between 30 and 90 minutes, depending on what data had already been collected on file as part of routine admission procedure. All participants were tested individually in a quiet room on the hospital's premises.

Where required individual performances on tasks were discussed with participants once they had been scored.

Statistical analyses were carried out using SPSS 11 for Windows.

2.4. Ethics

Ethical approval was gained from Ealing and West London Mental Health Trust Local Research Ethics Committee and Barnet, Enfield and Haringey Mental Health Trust Local Research Ethics Committee prior to data collection (see appendix 5a

and 1b). Informed written consent (see appendix 6, for copy of form), which conformed to the local ethical committees guidelines, was obtained from all participants.

RESULTS

3.1 Characteristics of the sample.

The mean and *SD* scores for the whole sample are as follows. The mean PCL-SV score was 12.85 (*SD.* = 4.1), the mean Empathy Quotient score was 38.85 (*SD* =11.3) and the mean ToM score was 21.65 (*SD*= 5.1). The median scores for ToM were 22, 38 for the Empathy Quotient, and 12 for the PCL-SV. The mode scores were 21 for ToM, 38 for the Empathy Quotient and 12 for the PCL-SV.

The participants omitted no items on the ToM task or the Empathy Quotient. Where items were omitted on the PCL-SV because of insufficient information, the researcher pro-rated the scores according to the instructions provided in the PCL-SV manual. Normal distributions were observed on all three measures.

Twenty-four participants (60%) were reported as actively symptomatic, while 16 participants (40%) were reported as being in remission (i.e. not experiencing active symptoms) on the day of testing. Eighteen participants scored above the cut-off score for psychopathy, with a mean score of 16.38 (*SD.* 2.5) and 22 participants fell below the cut-off score with a mean score of 9.95 (*SD.* 2.7).

The mean, median and mode scores for IQ, executive functioning and memory are illustrated in the table below.

	Mean	SD	Median	Mode
FSIQ	85.1(11.1)		82.0	75.0
Rey copy	32.6 (5.3)		35.0	36.0
Rey immediate recall	15.7 (7.3)		16.0	21.0
Rey delayed recall	15.2 (6.2)		14.5	11.0
Stroop 2	.80 (.22)		.91	.98
Animals	16.2 (3.5)		16.0	12.0
FAS	35.1(9.9)		34.5	27.0
Trails A	33.1(10.77)		32.0	27.0

Table 1. Measures of central tendency for IQ, Executive Functioning and Memory.

FSIQ scores were significantly positively skewed so were logarithmically transformed in order to meet the assumptions of normality required for parametric analysis. Trails B scores were also significantly positively skewed and were transformed by using the square root. Stroop 2 scores were significantly negatively skewed so were transformed by taking the square root of the reflected score.

ToM, Empathy and PCL-SV scores were correlated with IQ, memory and executive Functioning variables using a Pearson Correlation (2 tailed). The results are illustrated in the table below.

	ToM	Empathy	PCL-SV
FSIQ	.33 *	.14	.11
Rey copy	.01	.12	.03
Rey Immediate recall	.30	.21	.03
Rey delayed recall	.13	.22	.17
Stroop 2	.37	.23	.06
Animals	.09	.34*	.29
FAS	.18	.33*	.26
Trails A	-.09	.00	.08
Trails B	-.09	.07	.11

* Correlation is significant at the 0.05 level (2-tailed).

Table 2. Correlations between ToM, Empathy and Psychopathy and other cognitive tasks.

A significant correlation was found between ToM and FSIQ and empathy and Verbal Fluency (animals and FAS). However after controlling for type 1 error using a Bonferonni correction these results were not significant.

3.2. Correlations between psychopathy scores and ToM and empathy.

Since psychopathy and ToM scores were normally distributed a Pearson Correlation (one tailed) was carried out. The results demonstrated a significant correlation in the hypothesized direction ($r = .277^*$, $p = .042$), indicating that the higher the score on the PCL-SV, the higher the score on the ToM task. For the sake of completeness, the association between psychopathy and ToM was recalculated using a partial correlation in order to control for IQ. This was done because the association between ToM and FSIQ was statically significant in section 3.1 without the correction for Type 1 error. The results did not demonstrate a significant correlation ($r = .256$, $p = .058$), however there was a trend towards significance in the predicted direction.

Since Psychopathy and Empathy scores were normally distributed a Pearson Correlation (one tailed) was carried out. The results did not demonstrate a significant correlation between the two constructs ($r = .179$, $p = .134$). This indicated that, contrary to the hypothesis, there was no relationship between scores on the PCL-SV and the scores on the Empathy Quotient.

3.3 Differences in ToM and empathy depending on the presence of psychotic symptoms.

An independent samples t test was used to examine differences in ToM scores between reported symptomatic and non-symptomatic participants. No significant group differences were observed ($t(38) = 1.39$, $p = 1.73$). That is, contrary to the

hypothesis, there were no notable differences between scores on the ToM task between participants who were reported as being actively symptomatic or in remission.

An independent samples *t* test was used to examine differences in Empathy scores between symptomatic and non-symptomatic participants. Again no significant group differences were observed, ($t(38) = 1.86, p = .07$). This indicated that scores on the Empathy Quotient were not associated with reported symptomatology.

3.4. The relationship between ToM and empathy.

The prediction that ToM scores and Empathy scores would positively correlate when psychopathic traits were absent was investigated using a Pearson Correlation (one tailed). No significant correlation was found ($r = .215, p = .336$). This indicated that, contrary to the hypothesis, scores on the ToM task were not associated with scores on the Empathy Quotient. A similar pattern was observed when the analysis concentrated on participants who scored above the cut-off score of psychopathy ($r = .096, p = .706$). As previous findings have suggested that psychopaths have intact ToM but impaired empathy this finding was expected, however either result has to be interpreted cautiously as dividing data into two groups reduced the overall power of the analysis.

3.5. The relationship between the empathy variables.

It was suspected that the self-report method of measuring empathy might have been inaccurate because of dishonest participant responses (e.g. several respondents replied that they would never commit a criminal offence despite being incarcerated in a forensic inpatient unit). To investigate this further scores from the Empathy Quotient were correlated with individual scores on item 5 on the PCL-SV (lack of empathy) using a Pearson Correlation (two-tailed). The results indicated a

significant positive correlation between scores on the Empathy Quotient and scores on the empathy item on the PCL-SV, ($r = .348, p = .028$). This is an unexpected finding as high scores on the PCL-SV empathy item indicates a lack of empathy, while high scores on the Empathy Quotient are indicative of high empathic capacity. Thus the more the participants were rated as not having empathy, the more empathic the participants claimed they were. This suggested that the scores on the Empathy Quotient were not accurately tapping into the construct of empathy. Victim empathy programmes are common in secure settings and patients are acutely aware that negative attitudes around empathy may impede discharge. It is interesting to note that the participants who scored quite low on the Empathy Quotient (and arguably more truthfully) had hospital order recommendations that meant discharge within the foreseeable future was unlikely.

As a trained researcher independently rates the PCL-SV empathy score, it was decided that it might have represented a more accurate measure of empathy than the Empathy Quotient. The data were therefore re-analyzed using this new variable. Unfortunately psychopathy and empathy scores were unable to be re-calculated as it would be incorrect to assess associations using items from a single measure, which are associated by definition.

3.6. The relationship between Empathy (as measured by the PCL-SV empathy item) and psychotic symptoms.

An independent samples t test was used to examine differences in empathy scores between symptomatic and non-symptomatic participants. Again no significant group differences were observed, ($t(38) = .611, p = .545$). This indicated that empathy was not associated with reported symptomatology in this sample.

3.7. The relationship between ToM and empathy (as measured by the PCL-SV empathy item).

The prediction that ToM scores and empathy scores would positively correlate when psychopathic traits were absent was investigated using a Pearson Correlation (one tailed). Contrary to the hypothesis, no significant correlation was found ($r = .232$, $p = .075$), however a trend in the predicted direction was observed. As expected no significant correlation was found between empathy and ToM with participants who scored above the cut-off score for psychopathy ($r = .119$, $p = .320$). However, as before, caution needs to be taken in the interpretation of either result as dividing the sample reduced the overall power of the analysis.

4. DISCUSSION

The main aim of this study was to investigate whether ToM or empathic ability among patients with schizophrenia is associated with psychopathic traits. The sample was screened for psychopathy using the Hare Psychopathy Checklist, Screening Version (PCL-SV, Hart et al, 1990) and performances compared on ToM and empathy using the Reading of the Mind in the Eyes task (Baron-Cohen, et al, 1997) and the Empathy Quotient respectively (Baron-Cohen and Wheelwright, 2004). A cut-off score of equal or greater than 13 was used to assign the presence of psychopathy. Active symptomatology was recorded via discussion with the relevant clinical teams. A battery of IQ, memory and executive functioning measures were administered in order to control for potential differences between participants in these abilities.

4.1. Psychopathy and ToM.

It was predicted that ratings of psychopathy (using the PCL-SV) would correlate positively with ToM ability. A statistically significant positive correlation was initially found between ToM scores and psychopathy scores. However when IQ scores were controlled for this correlation became insignificant. Nonetheless the result was just below level of statistical significance after IQ was controlled for and therefore indicative of a trend in the hypothesised direction. A more meaningful result may have been achieved had the sample size been greater.

The finding that ToM was not significantly positively correlated with psychopathy after IQ was controlled for was contrary to the prediction. However, while there has been tentative suggestion that ToM is marginally superior in the psychopath (Blair, 1996), possibly serving an adaptive function in terms of victim manipulation (Soderstrom, 2003), other studies on adult psychopathic individuals show that ToM does not significantly differ from that of non-psychopathic controls (e.g. Richell et al 2003). Indeed many of these studies have focused on the possibility of ToM being impaired in this patient group, rather than being superior.

Although the study was unable to find a statistically significant relationship between ToM and psychopathy, a point of interest for the present study was whether the presence of psychopathic traits, which may involve the ability to deceive and manipulate (Hare, 1991) might have had some buffering effect on the ToM impairment frequently observed in people with schizophrenia (e.g. Harrington et al, 2005). While the mean ToM scores for participants scoring above the cut-off for psychopathy was slightly higher (22.8) than participants scoring below the cut-

off (20.68) this was not a statistically significant difference. Indeed the overall mean score for the complete data set (21.65) was very close to previously collated data using a similar patient group (21.02) and considerably lower than healthy controls (29.7) (Murphy, 2006, unpublished data on male patients aged between 20 - 40 yrs detained in high secure psychiatric care). Nonetheless, given the trend established above it is important to acknowledge the power lost in the analysis when the sample was divided into two groups. It is possible that a more meaningful result may have been achieved with a greater sample size.

The finding that IQ was a better predictor of ToM in this sample also contrasts with previous work, which suggests that ToM performance is independent of IQ (e.g. see Harrington, (2004) for a review). However this remains a controversial area and some research has emerged which suggests that IQ may be related to ToM in patients with schizophrenia (Brüne, 2003). Brüne (2003) used picture stories and first and second order false belief tasks to compare ToM between patients with chronic disorganised schizophrenia and healthy controls and found no differences in performance after IQ was controlled for. This, he argued, suggested that ToM impairments in schizophrenia may be associated to domain general difficulties (e.g. attention, working memory and general intelligence) rather than reflective of a 'genuine compromised mental state attribution' (p.57).

4.2. Psychopathy and empathy.

It was predicted that psychopathy scores would negatively correlate with empathy scores. The study was unable to find any significant association between high psychopathy scores and low empathic ability as measured on the Empathy Quotient. On the contrary, some of the participants who scored highest on the

psychopathy measure also scored above the normal range for males (47.2) (Lawrence et al, 2004), on the Empathy Quotient. Given the weight of research, which suggests that lack of empathy is a marker of psychopathy (e.g. Blair, 2005), this was certainly an unanticipated outcome. This instigated a closer look at the individual scores for empathy on the PCL-SV and indeed what was found was that for some of the respondents, the more they were rated as not having empathy on the PCL-SV, the more they said they were empathic on the Empathy Quotient.

This finding may reflect an element of deception in the self-reports of empathy. For instance it was noted that several of the participants responded on the Empathy Quotient that they would ‘never break the law, no matter how minor’ despite being incarcerated in a forensic inpatient unit, or that they carry ‘very strong opinions about morality’ in spite of displaying unethical and intimidating behaviour both in the community and in hospital. This highlights a potential difficulty in using self-reports to measure a socially desirable construct, particularly in this patient group. Dolan and Fullam (2004) were also unable to find any significant group differences in self-reported empathy between psychopaths and non-psychopaths and concluded that the validity of self-report empathy measures in criminal populations may be questionable. Given that prisoners or forensic patients are routinely aware of how their responses may affect possible sentencing or discharge, it is perhaps not surprising that many may portray themselves in an inaccurately good light.

To investigate this issue further scores from the Empathy Quotient were correlated with item 5 on the PCL-SV (ratings of lack of empathy), which is a scale filled in by the assessing clinician, using interviews and comprehensive case-records. This

second measure may be assumed to be more reliable and free of social desirability biases. High scores on the Empathy Quotient reflect high self-ratings of empathy while high scores on the empathy item of the PCL-SV reflect lack of empathy as rated by a clinician. If the scores taken from the Empathy Quotient are a valid and reliable representation of empathic ability then a significant negative correlation would be expected between the two measures. In the present study a significant positive correlation was found. This suggested that the self-report scores for empathy were an invalid representation of empathic ability. This positive correlation may be accounted for by an increased likelihood of deception on behalf of the participants rated higher on psychopathic traits.

As the empathy item on the PCL-SV was considered to be a more reliable measure than the Empathy Quotient, it was decided to re-run the analysis using this as a new variable for empathy. Unfortunately, it would be incorrect to assess the association between empathy and psychopathy by using items from a single measure, which are associated by definition. Therefore the study was unable to recalculate psychopathy and empathy scores

4.3. Schizophrenia symptoms and ToM.

It was predicted that ratings of schizophrenia would correlate negatively with ToM. The study was unable to detect any significant relationship between active symptomatology and ToM, suggesting that a patient's current mental state did not influence their capacity for ToM. However, the present findings may have been affected by some potential flaws in the methodology. Originally the study was designed to record schizophrenia symptoms using the Positive and Negative Syndrome Scale (PANSS) (Kay et al, 1992) for schizophrenia. However this

instrument again relied on self-report measures and it was felt the results may have been contaminated by the possibility of participants 'faking good' or indeed 'faking bad'. For instance, the PANNS was initially administered to four patients, three of which denied experiencing any psychotic symptoms, despite being on an acute ward and presenting as floridly psychotic. It was therefore decided to rate symptomatology depending on the opinion of the patient's clinical team. Participants were rate '0' if the Responsible Medical Officer (where available), nursing team, psychologist and occupational therapist involved felt the patient was in remission and '1' if this team of professionals thought the participant was experiencing symptoms on the day of testing.

However it is possible that the staff testimony was equally as susceptible to patient deceit. Moreover there were frequent disparities between individual team members and considerable variance between cases in the quality of progress notes. Finding a more systematic way of summarising professional opinion proved difficult and as a result the study may have been unable to accurately assess the participant's mental state. In hindsight the study could have perhaps used a more comprehensive method of assessing psychopathology. Abu-Akel and Abushua-leh (2004), for instance, did not report any problems when they employed the Brief Psychiatric Rating Scale (BPRS, Overall and Gorman, 1962) to record severity of illness, which relies heavily on systematic observer ratings. However this instrument also involves an element of self-report, again making it vulnerable to social desirability bias.

Regardless, although this finding was contrary to the hypothesis, the observations

fit with ideas that ToM may be a trait rather state dependent variable. Although Frith (1992) suggested that patients with remitted psychoses and patients who experience only 'passivity symptoms' may perform normally on ToM tasks, other authors have suggested that ToM deficits in schizophrenia cannot be explained by the severity of the disorder alone (see Brüne, 2005 for a review). Herold et al (2002) for instance, found that remitted patients with paranoid schizophrenia performed worse on an irony task than healthy controls, while Janssen et al (2003) found a continuum in ToM performance between remitted patients with schizophrenia, first-degree relatives and controls without a family history of psychotic disorders (with schizophrenia patients being most impaired, followed by first-degree relatives). Nonetheless the debate on whether ToM impairments in schizophrenia are state or trait dependent remains controversial. With reference to the present study, it can be deduced that, compared to the normal population, ToM is impaired in a group of forensic patients with schizophrenia, regardless of active symptomatology.

4.4. Schizophrenia symptoms and empathy.

The relationship between ratings of schizophrenia and empathy scores was left undetermined. In accordance with Montag et al (2007) no significant impairment in empathy was observed. This finding contrasts with Abu-Akel and Abushua'leh's work (2004), which demonstrated a negative correlation between empathy and ratings on the BPRS. However, it is important to acknowledge that they employed a second order ToM task (recognition of faux pas task) to measure empathy, which confounded measurements of empathy and ToM.

4.5. ToM and empathy

It was predicted that empathy scores would positively correlate with ToM scores. While the study was unable to report a significant positive correlation between ToM and empathy (as measured by the PCL-SV empathy item) a trend in the hypothesised direction was observed. This finding is in line with the various models of empathy which postulate that perspective taking is a cognitive component of empathy (e.g. Davis, 1983, Marshall, 1995). Blair (2005), for instance, conceptualises the concept of empathy as a synthesis of ToM, motor and emotional processes and suggests that ToM and emotional affect are reliant on the same (albeit partially dissociable) overall neurobiological architecture, a common region to all three divisions being the superior temporal cortex.

As research (e.g. Blair, 2005) has suggested that psychopaths have intact ToM but impaired empathy it was also predicted that ToM and empathy would not be associated in people who scored above the cut-off score for psychopathy. As expected no correlation or trend was found between in two constructs, however as the study also failed to demonstrate a trend with participants scoring below the cut-off for psychopathy, it is likely that this finding reflects the reduced power involved when the sample size was divided into two groups.

The staged models of empathy (e.g. Blair, 2005) influenced the theoretical reasoning behind this prediction. If one assumes that ToM is a cognitive component of empathy and if the results failed to show a relationship between the ToM and empathy when psychopathic traits are present, one might suppose that empathy processes can be interrupted at different levels. Marshall et al (1995), for instance argue that empathy involves an ordered progression of emotion

recognition, perspective taking, emotional replication and response decision. This implies that, while an individual may be able to take the perspective of another, an ability routinely associated with ToM, impairments further down the process may impede compassionate behaviour. Similarly Blair (2005) suggested that empathy can best be understood as a collection of specific neurocognitive functions which may be selectively disrupted, in the case of psychopathy, at the level of emotional empathy. Further work is necessary to clarify these ideas.

4.6. Summary

Overall the findings suggest that there may be some association between improved ToM and psychopathy in patients with schizophrenia, but not significantly so. On the other hand the study was unable to demonstrate an association between empathic problems and either psychopathy or schizophrenia. Offering support to empathy theories, which suggest that ToM is a cognitive component of empathy (e.g. Blair, 2006) the findings did demonstrate a trend towards an association between the two constructs. However this trend appeared to be independent of psychopathy, which contrasts with ideas that selective disruptions of empathic functioning (namely at the level of emotional empathy) lie at the heart of psychopathic disorder Blair, 2006).

On the other hand the findings may have been influenced by various methodological weaknesses. For instance the problems observed in accurately measuring empathy and active symptomatology illustrate the potential difficulties in conducting research with a forensic psychotic population. The transparency of self-report measures of empathy are particularly challenging where social desirability bias is an issue (Dolan and Fullam, 2004), while accurately assessing

symptomatology may be problematic when disclosure (or indeed denial) of active symptoms may have an influence on possible sentencing or discharge. Even relying on staff testimony can be problematic when there are discrepancies of opinion and variations in quality of patient records. In 32 of the 40 cases, the participants were aware of the researcher's dual role as a clinician within the organisation and this may have impeded accurate disclosure. In terms of design improvement, it is feasible that a researcher completely unfamiliar to the participants, possibly conducting the research in a neutral setting, may be able to achieve more reliable self-reports.

The sensitivity of the measures also came into question. First the decision to rate participants as scoring '0' if their clinical team felt they were in remission and '1' if they felt they were experiencing symptoms on the day of testing, coupled with the discrepancies in staff testimony noted above, was perhaps a somewhat crude way of assessing symptomatology. Such a dichotomous method of assessing active symptoms removed some of the anticipated richness of the findings. A more robust method of assessing symptoms may have been to proceed with the PANSS placing particular emphasis the collation of staff reports.

The Empathy Quotient's ability to accurately tap into the construct of empathy was also questionable. It could be argued that any measure of empathy which involves agreeing or disagreeing with emotionally charged statements may only be evaluating cognitive elements of empathy.

Although according to the tables obtaining a large effect size with significance at 0.05 and power at 0.8, would require a sample size of 39, the findings may have been affected by the relatively small sample sizes involved, particularly when the

data were divided in terms of psychopathy and non-psychopathy. This draws attention to the potential difficulties involved in recruiting from a population who may be cautious, perhaps because of trust issues, to how their involvement in research may affect their circumstances. It is interesting to note that, despite reassurances of confidentiality and anonymity, many of the patients who were approached for consent were reluctant to become involved because of concerns about what would be held on their files. Indeed 19 potential participants (reflective of nearly 50% of the necessary sample) refused to participate.

Future studies may need to use more covert measures of investigating empathy in this population. For instance, as the amygdala and orbito-frontal cortex have been implicated as necessary for empathic understanding (e.g. Dolan and Fullam (2004), functional imaging studies may be a better option in clarifying how empathic deficits manifest in forensic populations. Research has suggested that there is a significant linear relationship between self-report and physiological response on fearful imagery in normal populations (Habel et al, 2002). Patrick et al (1993, cited in Habel et al, 2002) hypothesises that this normal association is impaired in psychopathic individuals. Using functional imaging scanners, it may be interesting to see whether such an association exists between self-report and physiological response during a mood induction task (e.g. using emotional images to induce positive and negative affect). On the other hand it could be that prospective longitudinal studies are needed to properly investigate empathy in forensic patients. In relation to empathy and offending, Jolliffe and Farrington (2004), argue that, only by repeated administration of self-report measures, coupled with the assessment of historical and developmental factors can the relationship between

empathy and anti-social behaviour be understood.

Previous work has suggested that empathy deficits may be context or person specific (e.g. Covell and Scalora, 2002). There is also evidence that empathy deficits may become triggered in response to certain events (Marshall et al 1995). In terms of future areas of interest and with particular emphasis on enhancing empathy for individual victims or in particular situations, this may be an important area to expand on in forensic populations.

If empathy is assumed to be a staged process (e.g. Marshall, 1995) developing instruments which accurately and independently tap into each sub-component may offer some insight into where selective disruptions may occur. In terms of treatment programmes, this may inform where best to pitch interventions. Programmes designed to increase empathy in violent offenders are common-place in many correctional facilities (Jolliffe and Farrington, 2004). However little evidence has emerged that these programmes are successful and furthering our knowledge in this area may bring the efficacy of such programs into question. For instance if we can be confident that psychopaths fundamentally lack the apparatus necessary for affective empathy, but are efficient in understanding the perspectives of others, it could be argued that empathy training may serve to facilitate a ‘pseudo empathy’, which could then be used as a further tool for victim manipulation. Moreover, given the difficulty in accurately assessing empathy through self-report, our ability to evaluate the outcome of such programs may be difficult.

In summary this work has suggested a positive correlation between psychopathy

and ToM, although this result was only found at a trend level of significance. Provisional support was also noted for empathy models which suggest that ToM is a sub-component of empathy (e.g. Blair, 2005), albeit again only at the trend level of significance. While the study was unable to demonstrate any other associations, the findings offered a clear illustration about the difficulties involved with research in forensic settings. Not only can patient concerns about confidentiality and anonymity impede recruitment, there are significant problems in using self-report measures, which may involve social desirability bias in populations where social desirability has particular salience with regard to future treatment and outcome.

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Part 3

Critical Appraisal

Introduction

I was drawn to this area of research for several reasons. How mental illness or personality disorders influence how people understand the minds of others, or appreciate their feelings, has always interested me and in terms of understanding interpersonal violence I feel this area of study is crucial. I also feel it is important to make some distinction between major mental illness and 'dangerousness'. While there may be a correlation between schizophrenia and violent behaviour (Mullen, 2006), particularly when variables like threat/control/override (TCO) symptoms or substance misuse are present, it is important to acknowledge that most people with schizophrenia are not violent and most violence in the community is not attributed to schizophrenia (Nolan et al, 1999). Nonetheless when a mentally disordered individual commits a violent crime the popular media frequently issues headlines which may distort the proportion of violence attributed to mental illness.

The outcome and process of this piece of research raised a number of issues. The following discussion will reflect on these, beginning with an examination of the methodological dilemmas that arose. The piece will then move on to an appraisal of the conceptual issues and how these along with the findings may have implications for clinical practice. Finally a personal reflection of the process will be explored before providing an overall summary and conclusion.

Methodological and conceptual issues

A reflection on the process as a whole raises certain methodological and conceptual issues. Firstly difficulties arose in selecting and recruiting appropriate participants. There were also concerns about the accuracy of the participant's self-reports, as well as with the precision of staff testimony and reliance on inconsistent patient

records. The sensitivity of the methods of measurement also came into question.

Recruitment

Several difficulties in the recruitment process occurred. Gaining access to patients in forensic institutions can be problematic, so for reasons primarily of convenience, it was felt that the sample population would, in part, be selected from the unit where I was on clinical placement (Camlet Lodge). I also thought that this would assist with recruitment as the participants would be familiar due to my presence on the wards. However many of the potential participants who I approached voiced their reservations about my dual role as a clinician, and had concerns about how their participation would affect their circumstances. This was despite reassurances that the data would be anonymous and confidential. Several other patients in the hospital had negative views about psychologists in general and on those grounds refused to participate. It is possible that had I been unfamiliar to the participants and perhaps known as a clinical research student I may have been met with less suspicion and concern.

Moreover, regardless of the participants being conscious of my clinical responsibilities, the relatively small sample sizes obtained (albeit meeting the necessary criteria for the power analysis) highlight the potential difficulties in recruiting from this population. Forensic patients are usually well briefed in how disclosures of any form may affect their circumstances. Many are also acutely aware that they are continually being assessed for risk and are familiar with the potentially damaging association with labels like psychopathy. Although it was clearly explained that no results on the Hare Psychopathy Checklist- Screening Version (PCL-SV, Hart et al, 1990) would be interpreted in terms of diagnosis,

many participants were apprehensive in allowing this particular measure to be taken. If the study were to be replicated it may have been useful to have only selected participants who had completed a PCL-SV as part of a previous assessment. However this measure is not necessarily done as a routine admission procedure in either high or regional secure settings, which may have resulted in recruitment from numerous institutions. This would have been practically difficult, not least in terms of access and gaining ethical approval across several trusts.

Self report and staff testimony

The problems associated with relying on self-report measures and staff testimony were particularly noticeable in this piece of research. Concentrating first on the self-report measure for empathy, it became evident that several of the responses on the Empathy Quotient were clearly inaccurate. For instance a large proportion of the sample stated that they would never break the law even though they were being formally detained under a forensic section of the Mental Health Act (1983). Also the vast majority of the participants interviewed insisted that they ‘carry very strong opinions about morality’ despite continually presenting with intimidating and unethical behaviours (e.g. bullying other patients or being sexually provocative with staff). This highlights the inevitable problems in using self-report methods for assessing socially agreeable concepts. Victim empathy programmes are common in secure hospitals and patients are perceptively aware that unsociably desirable attitudes around concepts like empathy may be interpreted in terms of heightened risk and impede possible discharge. It is interesting to note that the participants who scored particularly low (and perhaps more truthfully) on the empathy measure had committed offences which meant that discharge within the foreseeable future would have been very unlikely. A possible way of detecting

‘faking good’, would be to include a measure like the Lie Scale of the Eysenck Personality Questionnaire-Revised (EPQ-R, Eysenck and Eysenck, 1991) in the overall analysis. However, as this would only highlight patients who were not being truthful, the problem of collating accurate empathy scores would remain.

In terms of re-designing the study it is difficult to see how to overcome this problem without resorting to more covert measures of investigating empathy, like functional imaging. For instance an imaging study of empathy could involve asking people to answer empathy questions, whilst in a scanner and recording whether activity in the parts of the brain associated to empathy (i.e. the amygdala) are observed in the expected manner. However, this arguably focuses only on biological functioning and not psychological or subjective manifestations of emotion. In terms of encouraging more honest responding, anonymity may be improved by collating the data through postal response. Although many participants may not be motivated to complete and return the questionnaires without continued prompting.

The difficulty of using self report methods to measure symptomatology was also highlighted in this study. It was originally intended that schizophrenia symptoms were going to be recorded using the Positive and Negative Syndrome Scale for schizophrenia (PANSS, Kay et al, 1987). However three of the first four participants interviewed denied experiencing any psychotic phenomena despite being on high dependency acute wards and seemingly responding to internal stimuli during the interviews. In terms of entitlement to leave from the unit, given the weight of importance attached to being in remission it is perhaps not surprising that

these patients were possibly 'faking good'. Hypothetically the reverse may also have been possible, with patients waiting trial exaggerating or feigning symptoms in order to avoid a custodial sentence. With regards to replicating the study, it is again difficult to see how this could be improved upon without employing methods like rating symptomatology via clinical team testimony, which was indeed the method employed in favour of continuing with the PANNS.

However, relying on clinical team opinion also proved somewhat problematic on various levels. Firstly, there was considerable variance in the richness of staff testimony between participants. Whereas on some occasions I was able to have lengthy discussions with an individual's Responsible Medical Officer (RMO), primary nurse and social worker, on other occasions only brief dialogues with the available nurses and occupational therapy staff was possible. The quality of progress notes (i.e. the multi-disciplinary team's daily clinical entries) also differed between participants. These practical problems were hard to overcome for several reasons, not only was it difficult to schedule longer appointments because of the staff's other clinical responsibilities, staff shortages meant that many of the available staff members were bank staff who were unfamiliar with the participants in question. This inevitably meant that a systematic way of comparing levels of psychosis between individuals was lacking. Even when detailed contact with clinical teams was possible there were frequent disparities between individual team members. It is interesting to note that nursing staff, who by virtue of their role had more frequent contact with the participant, would sometimes rate the participant as being actively psychotic, while the RMO, who typically had the authority around entitlements, felt they were in remission. This suggests that staff testimony may be

equally as susceptible to patient deceit as self-report. Essentially it is difficult to see how best to assess symptomatology in a population where being 'well' may affect possible leave entitlement or discharge. It may be that the principal psychologist, who has already formed a trusted therapeutic relationship with the participant, may be the best placed to conduct the research. However, once again, this dual role may involve both practical and ethical issues.

One possible way of overcoming these problems is to combine observer ratings with self-report and note if there is a consensus. Abu-Akel and Abushua-leh (2004), for instance, did not report any problems when they employed the Brief Psychiatric Rating Scale (BPRS, Overall and Gorham, 1962), to record severity of illness, which combines systematic observer ratings with self-report.

Sensitivity of measures

The ability of some of the measures to tap into the constructs in question also came under scrutiny. Returning first to the method of assessing symptomatology, it was decided to rate a participant as scoring '0' if the relevant professionals involved felt that the patient was in remission, and '1' if they felt that the individual was experiencing symptoms on the day of testing. Aside from the pragmatic issues noted above, in terms of face validity, this method seems somewhat crude. The original aim of the study was to examine whether empathy and ToM differed in relation to differing levels of psychosis. A dichotomous method of assessing active symptoms removes some of the anticipated richness of the findings. Other studies have used scaled instruments to record severity of illness (e.g. Abu-Akel and Abushua-leh 2004), however as noted above the element of self-report often present makes it vulnerable to social desirability bias.

It could also be argued that the Empathy Quotient failed to assess all the possible components of empathy (e.g. cognitive, motor and emotional, (Blair, 2005)). Indeed any self-report measure of empathy which involves agreeing or disagreeing with emotionally charged statements may only be suited to measuring a cognitive element of empathy. If the study were to be replicated the Interpersonal Reactivity Index (Davis, 1983) may be a better option as it is designed to measure perspective taking, empathic concern, personal distress and fantasy. However, once again this instrument relies on self-report evaluation.

Moreover some of the items on the Empathy Quotient failed to address the apparent point of focus. For instance one item asked if the respondent 'enjoyed cutting up worms as a child'. Presumably this item was aimed at tapping into the propensity of childhood violence. It is interesting to note that a few participants responded 'no' to this item but volunteered that they had participated in torturing and dismembering larger animals.

No other difficulties arose with the remaining measures.

Clinical implications

Although the findings of the study were not as robust as one might have hoped for in terms of meeting levels of significance, several clinically relevant issues were highlighted. For instance, the deceit observed in responses suggests that the validity of research based on self-report (or indeed staff testimony) in forensic populations is open to question. Also, the tentative finding that level of psychopathy and ToM ability were positively correlated, coupled with the noted deception may have

implications for victim empathy programmes.

Self report research with forensic populations.

In terms of further research in this area, this study has offered a clear indication that there are inevitable difficulties in relying on self-report to investigate socially desirable concepts in populations where creating a positive image of oneself is crucial for leave entitlement or discharge. This arguably questions the efficacy of previous research in this area and suggests that more covert methods of exploration may be necessary.

Efficacy of empathy interventions.

Enhancing victim empathy is routinely emphasized in secure hospitals, particularly in personality disordered patients. At Broadmoor Hospital, for instance, both one to one and group based interventions are offered that concentrate on promoting victim empathy. However, while there are numerous studies that report the use of empathy enhancement in secure settings there almost none that have examined how effective they are (Covell and Scalora, 2002). It could be argued that if the psychopath can read another's mind effectively, as the literature suggests, but fundamentally lacks the ability to demonstrate genuine affective empathy (e.g. Blair, 2005), programmes designed to increase empathy may be futile. Perhaps if the essential brain structures are absent (Blair, 2005), training psychopaths to 'behave' empathic may prove counter-productive and serve to 'teach' the psychopath how to feign empathic behaviour, which could then be employed to influence or procure potential victims. Indeed Rice et al (1992) found that recidivism rates increased in psychopathic patients who attended a therapeutic community intervention, where victim empathy enhancement often plays a key role. Moreover, given the dishonesty observed in the present study and considering

that deception is a trait associated to psychopathy, evaluating the efficacy of such programmes may be difficult. In terms of reducing recidivism it may prove more valuable to emphasize reasons why re-offending would have personal negative outcome. No work to date has emerged addressing these issues.

ToM and Schizophrenia.

The finding that ToM was impaired in this sample of patients with schizophrenia, compared to the average population, was consistent with the body of literature on ToM in schizophrenia and may be clinically relevant. In terms of improving social communication and integration the link between impaired ToM and Schizophrenia may suggest a role for enhancing ToM skills in this patient population. Roncone et al (2004), for instance, found that a social cognition rehabilitation programme, based on enhancing the capacity to modify wrong beliefs and thinking strategies, statistically improved the social cognition deficits of a sample of patients with schizophrenia compared to a matched control of patients receiving treatment as usual. Sub-components of the rehabilitation involved learning how to observe the emotions of others, how to communicate personal feelings and how to make friends with other people. As the findings of the present study demonstrated that ToM was impaired regardless of the presence of psychopathic traits, similar ToM training may also be useful for individuals with a co-morbid diagnosis of schizophrenia and psychopathy.

Personal reflections

Reflecting on the overall process of the research, several general themes of interest emerged. Firstly various practical issues were apparent from the start. These included negotiating ethical approval, controlling time effectively and managing various organizational constraints. Challenges also arose in engaging a population

where interpersonal safety and trust were important issues, especially when the participants were particularly unwell. On the other hand I was struck by the number of participants who wanted to use the time therapeutically, which perhaps contrasted with expectations of conducting research with potentially ‘dangerous’ people.

Practical concerns.

Concentrating first on practical issues, various obstacles seemed evident from the primary stages of planning. I was informed very early on that conducting research at Broadmoor Hospital involved numerous problems. Not only was the relevant Ethical committee initially reluctant to authorize a DClinPsy project based at a maximum security unit, even when approval was gained, admittance to the hospital was complicated as I was not employed by the relevant Trust. To have open access to Broadmoor Hospital a two week induction course has to be completed, after which keys are issued. As a temporary researcher I was unable to attend this course. This meant I had to be chaperoned at all times, which involved careful time management and flexible planning in terms of recruiting suitable staff to accompany me. In hindsight it would have been easier if I had organized my current clinical placement at Broadmoor Hospital simultaneous to the time of data collection.

The shared use of resources, both at Camlet Lodge and at Broadmoor Hospital also created some difficulties. Room space, for instance, was frequently in short supply at Camlet Lodge and on occasion interviews had to be conducted in areas to which other patients had open access to. While this was not an issue at Broadmoor Hospital, the severity of some of the patient’s presentations necessitated a nurse

being present in the room with me, which, at times, put pressure on ward staffing levels. These issues highlight important dilemmas in terms of conducting any type of research within busy NHS settings. Although clinical effectiveness is ideally based on the systematic appraisal of available research, when significant financial constraints are involved a balance needs to be met between pragmatic clinical care and academic progression.

Engagement issues.

Conducting this piece of research gave me extensive exposure to potentially aggressive patients, many of whom had a distrust of NHS professionals. This meant that I had to take an open and flexible approach in terms of engaging their participation effectively. Obtaining consent for the assessment of psychopathy was particularly challenging. Perhaps for good reason, many of the patients were wary of being 'labeled' a psychopath and several expressed their concerns with some volatility. This required me to be careful but clear and honest in explaining the rationale for the study's design. Indeed my approach throughout the interviews often involved having to balance getting the best test performance out of the participant with containing aggression and ensuring personal safety. While some patients appeared to lack motivation and give random or incongruent answers, others were openly inappropriate at times, which involved me having to continuously assess and evaluate interpersonal risk.

This last point was particularly significant in terms of personal reflection. During the early stages of the interviews, one of the participants locked me in the room with him and became quite provocative. While the situation was successfully diffused, the incident generated some difficult and ambiguous feelings for me. I

had already had experience of working in a secure unit and was well informed in terms of risk assessment. However, I was ill prepared for this event and felt both vulnerable and uncertain about proceeding with the study, or indeed pursuing my intended career in forensic psychology. I discussed the event at length in supervision, which facilitated rational reflection and allowed me to have an open discussion about future aspirations. Looking back, the event not only exposed me to the realities of working with this population, it also taught me the value of never becoming complacent in any clinical situation.

On the other hand and perhaps in complete contrast to feeling at risk, I was also struck by how vulnerable and genuine many of the patients presented at interview. While some were concerned that they were not 'helping enough', others tried to use the time therapeutically, and seemed sincerely grateful to have some one to one attention. While this introduced various problems within itself, it also demonstrated a more multi-dimensional view of individuals who all too often become defined by their index offence or interpersonal risk. Indeed the fact that I felt both defenseless and empathic at different stages throughout this research highlights the complexities involved in working with this population.

Summary and conclusions

Conducting this piece of research has been both challenging and rewarding at different times. Various methodological issues arose, namely problems with using staff testimony where inconsistencies in quality of reports were evident and relying on self-report to measure concepts which may involve a social desirability bias. Indeed the observation that several of the responses were deceptive casts doubt on the use of self-report in research within populations where positive self-image

carries particular significance in terms of leave entitlement or discharge. How this observation relates to similar existing research is perhaps open to discussion. The sensitivity of some of the tools was also brought into question, which highlighted the potential for developing more robust and perhaps covert methods of measuring empathic functioning.

Although the findings were not always in the direction of the expected hypotheses, various clinical implications were noted. For instance the link between impaired ToM and schizophrenia may suggest a role for training ToM skills in this population, while the efficacy of empathy enhancement programmes for people with psychopathy may be disputed if ToM remains intact but the apparatus necessary of affective empathy is fundamentally lacking (Blair, 2005). Indeed the propensity to deceive may mean learned empathic behaviour can be employed as a tool for further victim manipulation.

On a more personal level I was exposed to the practical constraints of conducting research in demanding NHS settings where resources are often sparse. Through this I learned the importance of good time management and careful negotiation with the necessary infrastructures. I also experienced some difficult and contrasting feelings throughout the process. Whilst on one level, with regards to personal safety, I questioned my motivation and capacity to work with this patient group, at other times I was struck by some of the participants' own vulnerabilities, their attempts to engage and their need be understood.

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Appendix 1

Copy of the Empathy Quotient

THE CAMBRIDGE BEHAVIOUR SCALE

Please fill in this information and then read the instructions below.

ALL INFORMATION REMAINS STRICTLY CONFIDENTIAL

Name:..... Sex:.....

Date of birth:..... Today's date:.....

How to fill out the questionnaire

Below are a list of statements. Please read each statement very carefully and rate how strongly you agree or disagree with it by circling your answer. There are no right or wrong answers, or trick questions.

IN ORDER FOR THE SCALE TO BE VALID, YOU MUST ANSWER EVERY QUESTION.

Examples

- | | | | | |
|---|---|---|--|--|
| E1. I would be very upset if I couldn't listen to music every day. | strongly agree | <input checked="" type="radio"/> slightly agree | slightly disagree | strongly disagree |
| E2. I prefer to speak to my friends on the phone rather than write letters to them. | strongly agree | slightly agree | slightly disagree | <input checked="" type="radio"/> strongly disagree |
| E3. I have no desire to travel to different parts of the world. | <input checked="" type="radio"/> strongly agree | slightly agree | slightly disagree | strongly disagree |
| E4. I prefer to read than to dance. | strongly agree | slightly agree | <input checked="" type="radio"/> slightly disagree | strongly disagree |

1. I can easily tell if someone else wants to enter a conversation.	strongly agree	slightly agree	slightly disagree	strongly disagree
2. I find it difficult to explain to others things that I understand easily, when they don't understand it first time.	strongly agree	slightly agree	slightly disagree	strongly disagree
3. I really enjoy caring for other people.	strongly agree	slightly agree	slightly disagree	strongly disagree
4. I find it hard to know what to do in a social situation.	strongly agree	slightly agree	slightly disagree	strongly disagree
5. People often tell me that I went too far in driving my point home in a discussion.	strongly agree	slightly agree	slightly disagree	strongly disagree
6. It doesn't bother me too much if I am late meeting a friend.	strongly agree	slightly agree	slightly disagree	strongly disagree
7. Friendships and relationships are just too difficult, so I tend not to bother with them.	strongly agree	slightly agree	slightly disagree	strongly disagree
8. I often find it difficult to judge if something is rude or polite.	strongly agree	slightly agree	slightly disagree	strongly disagree
9. In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking.	strongly agree	slightly agree	slightly disagree	strongly disagree
10. When I was a child, I enjoyed cutting up worms to see what would happen.	strongly agree	slightly agree	slightly disagree	strongly disagree
11. I can pick up quickly if someone says one thing but means another.	strongly agree	slightly agree	slightly disagree	strongly disagree
12. It is hard for me to see why some things upset people so much.	strongly agree	slightly agree	slightly disagree	strongly disagree
13. I find it easy to put myself in somebody else's shoes.	strongly agree	slightly agree	slightly disagree	strongly disagree
14. I am good at predicting how someone will feel.	strongly agree	slightly agree	slightly disagree	strongly disagree

15. I am quick to spot when someone in a group is feeling awkward or uncomfortable.	strongly agree	slightly agree	slightly disagree	strongly disagree
16. If I say something that someone else is offended by, I think that that's their problem, not mine.	strongly agree	slightly agree	slightly disagree	strongly disagree
17. If anyone asked me if I liked their haircut, I would reply truthfully, even if I didn't like it.	strongly agree	slightly agree	slightly disagree	strongly disagree
18. I can't always see why someone should have felt offended by a remark.	strongly agree	slightly agree	slightly disagree	strongly disagree
19. Seeing people cry doesn't really upset me.	strongly agree	slightly agree	slightly disagree	strongly disagree
20. I am very blunt, which some people take to be rudeness, even though this is unintentional.	strongly agree	slightly agree	slightly disagree	strongly disagree
21. I don't tend to find social situations confusing.	strongly agree	slightly agree	slightly disagree	strongly disagree
22. Other people tell me I am good at understanding how they are feeling and what they are thinking.	strongly agree	slightly agree	slightly disagree	strongly disagree
23. When I talk to people, I tend to talk about their experiences rather than my own.	strongly agree	slightly agree	slightly disagree	strongly disagree
24. It upsets me to see an animal in pain.	strongly agree	slightly agree	slightly disagree	strongly disagree
25. I am able to make decisions without being influenced by people's feelings.	strongly agree	slightly agree	slightly disagree	strongly disagree
26. I can easily tell if someone else is interested or bored with what I am saying.	strongly agree	slightly agree	slightly disagree	strongly disagree
27. I get upset if I see people suffering on news programmes.	strongly agree	slightly agree	slightly disagree	strongly disagree
28. Friends usually talk to me about their problems as they say that I am very understanding.	strongly agree	slightly agree	slightly disagree	strongly disagree
29. I can sense if I am intruding, even if the other person doesn't tell me.	strongly agree	slightly agree	slightly disagree	strongly disagree

30. People sometimes tell me that I have gone too far with teasing.	strongly agree	slightly agree	slightly disagree	strongly disagree
31. Other people often say that I am insensitive, though I don't always see why.	strongly agree	slightly agree	slightly disagree	strongly disagree
32. If I see a stranger in a group, I think that it is up to them to make an effort to join in.	strongly agree	slightly agree	slightly disagree	strongly disagree
33. I usually stay emotionally detached when watching a film.	strongly agree	slightly agree	slightly disagree	strongly disagree
34. I can tune into how someone else feels rapidly and intuitively.	strongly agree	slightly agree	slightly disagree	strongly disagree
35. I can easily work out what another person might want to talk about.	strongly agree	slightly agree	slightly disagree	strongly disagree
36. I can tell if someone is masking their true emotion.	strongly agree	slightly agree	slightly disagree	strongly disagree
37. I don't consciously work out the rules of social situations.	strongly agree	slightly agree	slightly disagree	strongly disagree
38. I am good at predicting what someone will do.	strongly agree	slightly agree	slightly disagree	strongly disagree
39. I tend to get emotionally involved with a friend's problems.	strongly agree	slightly agree	slightly disagree	strongly disagree
40. I can usually appreciate the other person's viewpoint, even if I don't agree with it.	strongly agree	slightly agree	slightly disagree	strongly disagree

Thank you for filling this questionnaire in.

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Appendix 2

Example of Reading the Eyes in the Mind Task

Adult Eyes Instructions

For each set of eyes, choose and circle which word best describes what the person in the picture is thinking or feeling. You may feel that more than one word is applicable but please choose just one word, the word which you consider to be most suitable. Before making your choice, make sure that you have read all 4 words. You should try to do the task as quickly as possible but you will not be timed. If you really don't know what a word means you can look it up in the definition handout.

1

playful

comforting



irritated

bored

2

terrified

upset

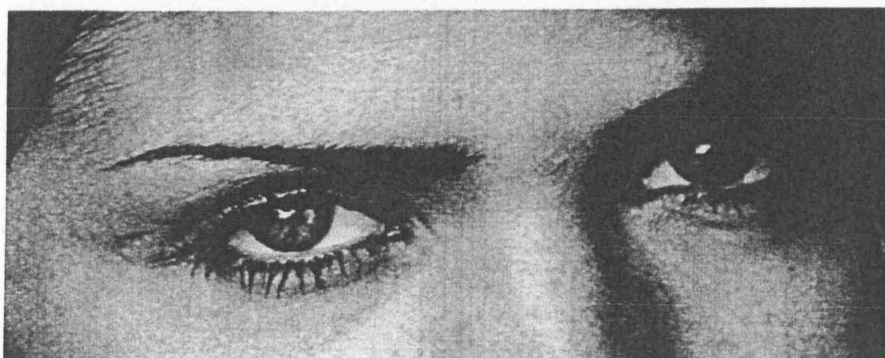


arrogant

annoyed

joking

flustered



desire

convinced

Appendix 3

Example of the PCL-R Checklist (Screening Version)

Hare Psychopathy Checklist-Revised: Screening Version

S. D. Hart, D. N. Cox & R. D. Hare

Part 1

Item 1: Superficial 0 1 2 Omit

- presentation is shallow and difficult to believe ✓
- displays of emotion do not appear genuine ✓
- attempts to portray self in a good light ✓
- tells unlikely stories; has convincing explanations for behavior ✓
- alters statements when challenged with facts or inconsistencies ✓
- uses technical language and jargon, often inappropriately ✓
- conversation and interpersonal behavior are engaging ✓

Item 2: Grandiose 0 1 2 Omit

- view of abilities and self-worth is inflated
- self-assured and opinionated
- exaggerates status and reputation
- considers circumstances to be the result of bad luck
- sees self as a victim of the system
- displays little concern for the future

Item 3: Deceitful 0 1 2 Omit

- manipulates without concern for the rights of others
- distorts the truth
- deceives with self-assurance and with no apparent anxiety
- a fraud artist or con man
- enjoys deceiving others

Item 4: Lacks Remorse 0 1 2 Omit

- appears to have no capacity for guilt; no conscience
- verbalizes remorse in an insincere manner
- displays little emotion in regard to actions
- does not appreciate impact on others
- concerned more with own suffering than with that of others

Item 5: Lacks Empathy 0 1 2 Omit

- cold and callous
- indifferent to the feelings or concerns of others
- unable to appreciate the emotional consequences of actions
- expressed emotions are shallow and labile
- verbal and nonverbal expressions of emotion are inconsistent

Item 6: Doesn't Accept Responsibility 0 1 2 Omit

- rationalizes; downplays the significance of acts
- minimizes the effects of behavior on others
- projects blame onto others or circumstances
- may maintain innocence or minimize involvement in crimes
- may claim to have been framed or victimized; may claim amnesia or blackouts for events surrounding offenses

Part 2

Item 7: Impulsive 0 1 2 Omit

- does things on the "spur of the moment" (including crimes); spends little time considering the consequences of actions
- frequently changes jobs, schools, or relationships
- a drifter; lives a nomadic lifestyle, with frequent changes of residence
- is easily bored; has difficulty doing things that require sustained attention
- likes to do things that are exciting, risky, and challenging

Item 8: Poor Behavior Controls 0 1 2 Omit

- is easily angered or frustrated, especially when drinking
- is often verbally abusive (swears and makes threats)
- is often physically abusive (breaks or throws things; pushes, slaps, or punches people)
- abuse may be sudden and unprovoked
- outbursts are often short-lived

Item 9: Lacks Goals 0 1 2 Omit

- does not have realistic long-term plans and commitments
- has lived life day-to-day, not thinking of the future
- has relied excessively on family, friends, and social assistance for financial support
- has poor academic and employment records
- may describe far-fetched plans or schemes

Item 10: Irresponsible 0 1 2 Omit

- behavior frequently causes hardship to others or puts them at risk
- unreliable as a spouse or parent: lacks commitment to relationships, fails to care adequately for children, etc.
- job performance is inadequate: is frequently late, absent, etc.
- untrustworthy with money: has been in trouble for defaulting on loans, not paying bills, not paying child support, etc.

Item 11: Adolescent Antisocial Behavior 0 1 2 Omit

- had conduct problems at home and at school as an adolescent
- was in trouble with the law as a youth/minor
- antisocial activities were varied and frequent

Item 12: Adult Antisocial Behavior 0 1 2 Omit

- disregards rules and regulations; has had legal problems as an adult
- has been charged with or convicted of criminal offenses
- antisocial activities are varied and frequent

Note: This handout is for educational purposes only. It is a summary of the content of the PCL:SV. Administration of the PCL:SV for clinical or research purposes must be based on the complete scoring criteria presented in the test manual.

Appendix 4

Information sheet given to participants

INFORMATION SHEET

THEORY OF MIND (THE ABILITY TO UNDERSTAND THE THOUGHTS AND INTENTIONS OF OTHERS) AND EMPATHY IN PATIENTS WITH A DIAGNOSIS SCHIZOPHRENIA WHO HAVE A FORENSIC HISTORY

You are being invited to take part in a research study. Before you decide whether or not you are willing to participate it is important that you understand why the research is being done and what it involves. Please take time to read the following information carefully and discuss it with others if you wish. If you would like more information please feel free to ask.. Thank you for reading this.

The aim of the study is to investigate the relationship between mentalizing ability, empathy, schizophrenia and psychopathy. The results hope to further explore the link between emotion and mentalizing ability and establish if any differences are associated with psychopathic qualities.

You have been chosen to take part because you fit the criteria of having a diagnosis of schizophrenia and a history of offending behaviour. This study requires the recruitment of 40 participants who match this criteria. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. **A decision to withdraw at any time or a decision not to take part will not affect the standard of care you receive.**

I would need to meet with you for a couple of hours. I will visit you in hospital at a mutually agreed time. The interviews will involve several different questionnaires, which will record mentalizing ability, empathy, schizophrenia symptoms, and substance misuse history. Some of the information will be taken from existing case notes so I would also need your permission to look at these. One questionnaire involves taking information from your case notes to assess for psychopathic traits. It is important that you realise your scores on this (and any other test) are used for research purposes only and will not be used in terms of diagnosis. All information, which is collected, about you will be kept strictly confidential. Your name and address will be removed so that you cannot be recognised. All scores will be coded anonymously. However in the event that you disclose a serious unknown offence or intent to offend the relevant hospital officials may be contacted.

Your participation will not require you to alter your present lifestyle in terms of activity, diet, or medication. As no treatment is involved there should be no side effects or risk of harm. However there is no intended clinical benefit for you either. If you have any concerns about how you have been approached or treated during the course of this study, the normal National Health Service complaint mechanisms should be available to you.

The results of the study will be part of a doctorate thesis in clinical psychology but may be published in relevant journals in the future. You will not be identified in any report or publication. I will be happy to forward you a copy of the published results. This study is being organised by University College London and sponsored by West London Mental Health Trust. I will not receive any payment for this work. However you

will be offered a payment of £10 for your participation should you agree to take part. This will not be retracted if you chose to withdraw mid study.

The local research Ethics Committees involved in this study are Barnet, Enfield and Haringey Local Research Committee and Ealing and West London Local Research Committee.

I will not always be based at this site so may be unable to answer any questions in person immediately, although a convenient time to meet can be arranged. However Dr David Murphy who is based at your hospital is also involved in this study.

Many thanks for taking time to read this.

Melora Wilson

Trainee Clinical Psychologist

Appendix 5a and 5b

Ethical Approval Letters

For WLMHT and BEHMT

RESEARCH

DEVELOPMENT

WEST LONDON MENTAL HEALTH

23 March 2006

Dear Ms Wilson

Re: Theory of mind (ToM) and empathy in patients with a diagnosis of schizophrenia who have a forensic history

I am pleased to confirm that the above project has received Trust R&D approval, and you may now commence your research.

May I take the opportunity to remind you that during the course of your research you will be expected to ensure the following:

- **Patient contact:** only trained or supervised researchers who hold a Trust/NHS contract (honorary or full) are allowed contact with Trust patients. If you do not hold a contract please contact the R&D Office as soon as possible.
- **Informed consent:** original signed consent forms must be kept on file. A copy of the consent form must also be placed in the patient's notes. Research projects are subject to random audit by a member of the R&D Office who will ask to see all original signed consent forms.
- **Data protection:** measures must be taken to ensure that patient data is kept confidential in accordance with the Data Protection Act.
- **Health & safety:** all local health & safety regulations where the research is being conducted must be adhered to.
- **Adverse events:** adverse events or suspected misconduct should be reported to the R&D Office and the Ethics Committee.
- **Project update:** you will be sent a project update form at regular intervals. Please complete the form and return it to the R&D Office.
- **Publications:** it is essential that you inform the R&D Office about any publications which result from your research.

We would like to wish you every success with your project.

Regards

Research Governance Co-ordinator

WEST LONDON MENTAL HEALTH NHS TRUST & CENTRAL & NORTH WEST LONDON MENTAL HEALTH NHS TRUST

TEL: 020 8354 8735/8 FAX: 020 8354 8733
EMAIL: rd.office@wlmht.nhs.uk

Barnet, Enfield and Haringey



Mental Health NHS Trust

**R & D DEPARTMENT
ST. ANN'S HOSPITAL
ST. ANN'S ROAD
LONDON N15 3TH**

19 May 2006

Ms Melora Wilson
68 Wilton Road
Muswell Hill
London
N10 1LT

Dear Ms Wilson,

Title of Study: **Theory of mind (ToM) and empathy in patients with a diagnosis of schizophrenia who have a forensic history.**

REC reference number: **06/Q0410/5**

I am pleased to note that you have received the favourable opinion of the Research Ethics Committee for your study.

All projects must be registered with the Research Department if they use patients, staff, records, facilities or other resources of the Barnet, Enfield and Haringey NHS Mental Health Trust.

The R&D Department on behalf of Barnet, Enfield and Haringey NHS Mental Health Trust is therefore able to grant approval for your research to begin, based on your research application and proposal reviewed by the ethics committee. Please note this is subject to any conditions set out in their letter dated 15 March 2006. Should you fail to adhere to these conditions or deviate from the protocol reviewed by the ethics committee, then this approval would become void. The approval is also subject to your consent for information to be extracted from your project registration form for inclusion in NHS project registration/management databases and, where appropriate, the National Research Register.

Permission to conduct research is also conditional on the research being conducted in accordance with the Department of Health Research Governance Framework for Health and Social Care*:

- Appendix A to this letter outlines responsibilities of principal investigators
- Appendix B details the research governance responsibilities for other researchers. It also outlines the duties of all researchers under the Health and Safety at Work Act 1974. Principal investigators should disseminate the contents of Appendix B to all those in their research teams.

It is required that all researchers submit a copy of their report on completion and details on the progress of the study will be required periodically for longer projects. Copies of all publications emanating from the study should also be submitted to the R&D Department.

Furthermore, all publications must contain the following acknowledgement.

"This work was undertaken with the support of Barnet, Enfield and Haringey NHS Mental Health Trust, who received "funding" from the NHS Executive; the views expressed in this publication are those of the authors and not necessarily those of the NHS Executive".

"a proportion of funding" where the research is also supported by an external funding body; "funding" where no external funding has been obtained.

Best wishes and every success with the study.

Yours sincerely,

Assistant Director R & D

*Further information on research governance can be obtained on the DH web pages at <http://www.doh.gov.uk/research/>

Appendix 6

Informed Consent Form

Centre Number: :
Study Number:
Patient Identification Number for this trial:

CONSENT FORM

Title of Project: **Theory of mind and empathy in forensic patients with a diagnosis of Schizophrenia.**

Name of Researcher: Melora Wilson

Please initial box

1. I confirm that I have read and understand the information sheet dated
(version) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw
at any time, without giving any reason, without my medical or psychological care or legal rights being affected. ☐
3. I understand that relevant sections of any of my medical notes and data
collected during the study, may be looked at by responsible individuals from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐
4. I agree to take part in the above study. ☐

Name of Patient

Date Signature

Name of Person taking consent
(if different from researcher)

Date

Signature

Melora Wilson
Researcher

Date

Signature

When completed, 1 for patient; 1 for researcher site file; 1 (original) to be kept in medical notes